U.S. Department of the Interior
Bureau of Land Management

Anchorage Field Office
4700 BLM Road
Anchorage, Alaska 99507
(907) 267-1246
http://www.blm.gov/ak/st/en/fo/ado.html

Environmental Assessment and
Plan of Operations Amendment
Mineral Material Disposal of Tailings from Federal Placer Mining Claims 43 CFR §3600

Applicant: XS Platinum, Ltd., successor in interest to
R. A. Hanson Mining Company, Inc. and
the Goodnews Bay Mining Company

Case File Number: AA-091137
DOI-BLM-AK-1330-2009-0015-EA

Location:
Federal Mining Claims of XS Platinum, Ltd. (Goodnews Bay Mining Company)
Seward Meridian
T. 14 – 16 S., R. 75 W.

Prepared by:
Anchorage Field Office

April 16, 2009

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1.0. INTRODUCTION

XS Platinum, Ltd., is the successor in interest to A. Hanson Mining Company, Inc. and the Goodnews Bay Mining Company. Goodnews Bay Mining Company mined numerous claims in the vicinity of Platinum, Alaska from the mid 1920's through the early 1970's for platinum. As a consequence of these operations there are 44 million cubic yards of tailings on the mining claims. The State of Alaska has decided to develop a new airstrip at Platinum, Alaska, approximately 9 to 10 miles north of the mining claims, at the end of the mining claimant's access road to the claims. XS Platinum, Inc. bid on and was awarded the contract to supply sand and gravel for development of the new airstrip.

XS Platinum, Inc. is currently engaged in processing old tailings piles to recover residual platinum and will be generating new tailings piles. XS Platinum intends to supply the mineral materials (200,000 cubic yards) for airstrip development from the new tailings piles.

1.1. Land Status

The lands from which the mineral materials will be taken are all unpatented, Federal mining claims. The road upon which the mineral material will be transported constitute the claimant's ingress and egress to its claims and pre-dates the Alaska Native Claims Settlement Act Section 17(b) easement that overlays the road. The lands surrounding the claims, the road and the new airpstrip site are all privately held.

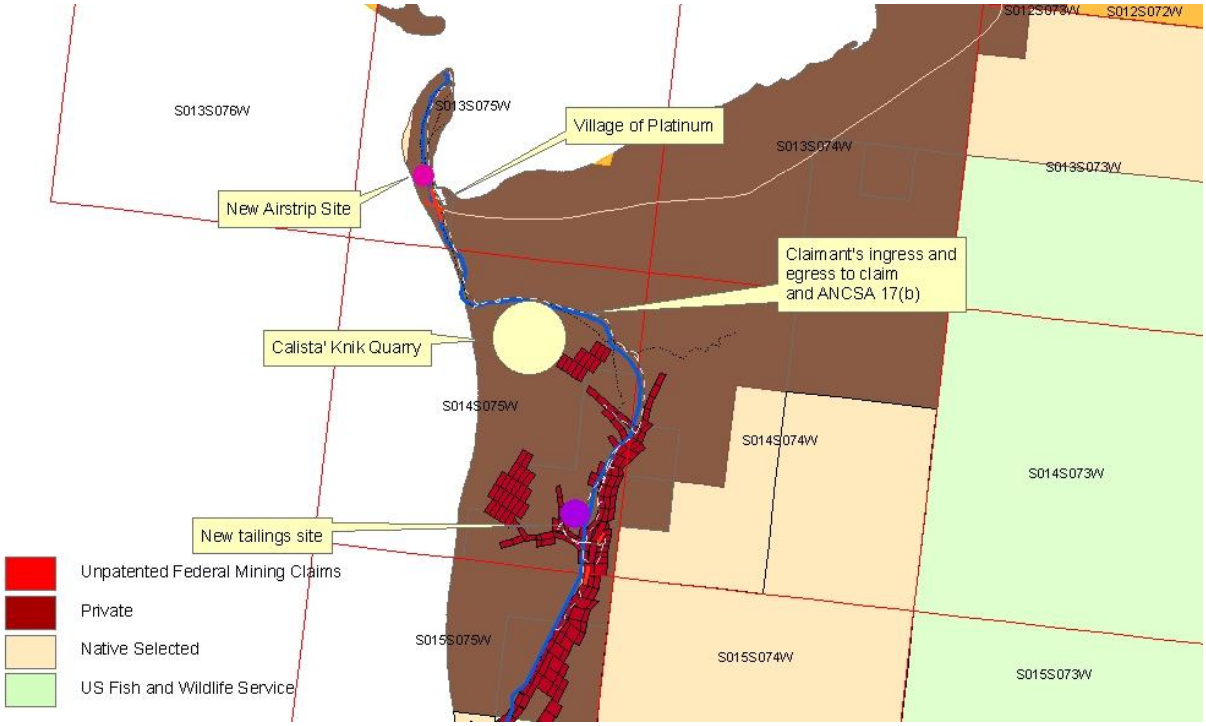

Figure 1 Land Ownership

1.2. Relationship to Statutes, Regulations, Policies, Plans or Other Environmental Analyses

1.2.1. Statutory and Regulatory Authority

The Federal Land Policy and Management Act directs the Secretary of the Interior in recognition of the inter-generational resource needs of the nation to manage the public lands under principles of multiple use and sustained yield through the issuance of permits or other appropriate legal instruments while preventing unnecessary or undue degradation of the lands, their resources and the environment.[1] Recreational use of the public lands is within that management authority.[2]

The Federal Land Recreation Enhancement Act authorizes the Secretary of the Interior to issue Special Recreation Permits (SRP) for specialized recreational use of public lands.[3]

The implementing regulations of the Federal Land Recreation Enhancement Act require a Special Recreation Permit for *commercial use* of the public lands.[4] Commercial use is defined as follows:

> *Commercial use* means recreational use of the public lands and related waters for business or financial gain.
>
> (1) The activity, service, or use is commercial if—
>
> (i) Any person, group, or organization makes or attempts to make a profit, receive money, amortize equipment, or obtain goods or services, as compensation from participants in recreational activities occurring on public lands led, sponsored, or organized by that person, group, or organization;
>
> (ii) Anyone collects a fee or receives other compensation that is not strictly a sharing of actual expenses, or exceeds actual expenses, incurred for the purposes of the activity, service, or use;
>
> (iii) There is paid public advertising to seek participants; or
>
> (iv) Participants pay for a duty of care or an expectation of safety.
>
> [43 CFR §2932.5]

1.2.2. Executive Orders 11644 and 11989

Although *specialized recreational use* of public lands requires permitting and is therefore outside of the scope of Executive Orders 11644 and 11989, the orders provide relevant and appropriate guidance for managing *specialized recreational use* of the public lands.

[1] 43 U.S.C. §1732(b)
[2] 43 U.S.C. §1701(a)(8)
[3] 16 U.S.C. §6802(h)
[4] 43 CFR §2932.11

Executive Orders 11644 and 11989 provide that the use of snowmobiles and other vehicles "… on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among various uses of those lands." The Executive Orders require that the use of such vehicles be regulated to the end that such use minimizes:

- … damage to soil, watershed, vegetation, or other resources of the public lands,
- … harassment of wildlife or significant disruption of wildlife habitats,
- … conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands;

and is compatible with

- … existing conditions in populated areas, taking into account noise and other factors;

further, whenever the use of such vehicles

- … cause or is causing considerable adverse effects on soils, vegetation, wildlife, wildlife habitat or cultural or historic resources of particular areas or trails of the public lands … [such areas or trails shall be closed] … to the type of off-road vehicle causing such effects until such time as … such adverse effects have been eliminated and … measures have been implemented to prevent future recurrence.

The BLM manages off-road vehicle use in Alaska through 43 CFR §8340 et. seq. Section 8341.2(a) provides:

> where the authorized officer determines that off-road vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the authorized officer shall immediately close the areas affected to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence.

1.3. Plan Conformance 43 CFR §1610.5-3

1.3.1. BLM-Alaska's Kobuk - Seward Peninsula Record of Decision and Resource Management Plan

The Kobuk-Seward Peninsula Resource Management Plan, dated July 25, 2008, identifies the Kigluaik Mountains as a Special Recreation Management Area/Zone with a management goal of "… improv[ing] access to appropriate recreation opportunities, ensur[ing] a quality outdoor experience and enjoyment of natural and cultural resources, and provid[ing] for and receiv[ing]

fair value in recreation." The Plan further provides that "The Kigluaik Mountains … will be identified as a SRMA (290,000 acres; 281,000 acres selected lands) … [and is presently identified as a] … Recreation Management Zone (RMZ) …."

The management direction for the Kigluaik Recreation Management Zone provided in the plan includes the following prescriptions:

- Manage as "semi-primitive motorized"[5] and "roaded natural" under the Recreational Opportunity Spectrum [system of recreation classifications].[6]
- No limits on visitor use days.

The Kobuk-Seward Peninsula Resource Management Plan also designates a substantial portion of the Kigluaik Mountains as an Area of Critical Environmental Concern, Mount Osborn ACEC, *see* Figure 1 above, for scientific reasons due to the presence of genetically isolated Arctic char in many of its lakes. As a consequence of this designation the Plan provides that the ACEC is "limited" for off-highway vehicle use. "Limited" is defined as OHV use consistent with the State of Alaska's current Generally Allowed Uses regulations. The State's Generally Allowed Uses regulations require a State permit to operate off-highway vehicles off of the road system where such vehicle exceeds 1,500 pounds.

The Alaska Department of Natural Resources, Division of Mining, Land and Water has issued Bering Straits Native Corporation, d/b/a Kigluaik Adventures permits for "Cross Country Travel via tracked vehicles."

The Kobuk-Seward Peninsula Resource Management Plan contemplates recreational use of lands within the Bureau of Land Management's management purview in the Kigluaik Mountains including "semi-primitive motorized" use of those lands and defers to the State of Alaska's Generally Allowed Uses regulations when regulating motorized use of the State Selected, BLM *administered* lands in the Kigluaik Mountains. The State's Generally Allowed Uses regulations contemplate the use of off-highway vehicles provided the operator obtains a State permit for such use where the vehicle exceeds 1,500 pounds. The proposed action is in conformance with the Kobuk-Seward Peninsula Resource Management Plan.[7] This environmental document tiers off of the Plan.

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[5] Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present but are subtle. Motorized use is permitted. "*Introduction to Recreation and Leisure*, Human Kinetics (organization), Kinetics Human 2006, Page 322.

[6] A system for planning and managing recreation resources that categorizes recreation opportunities into three classes: semi-primitive, roaded natural, and rural. A tool commonly used by federal land management agencies to determine the level of development, the types of facilities that are appropriate, and the type of recreational opportunities that one will experience. Six recreation opportunity classes have been developed: primitive, semiprimitive nonmotorized, semiprimitive motorized, roaded natural, rural, and urban.

[7] 43 C.F.R. § 1610.8(a)(3) (2006)

2.0. FEDERAL ACTION

As Kigluaik Adventures intends to engage in Snow-cat tours and skiing operations on public lands for financial gain, the Secretary of the Interior is required to manage such use as a *specialized recreational use* through the issuance of a Special Recreation Permit.

2.1. Proposed Action – Issuance of a Special Recreation Permit

First full year of operations – exploratory year: The Bureau of Land Management proposes to issue Bering Straits Native Corporation, d/b/a Kigluaik Adventures, a Special Recreation Permit authorizing it ingress and egress into federally *administered* public lands within the Kigluaik Mountain Range on Alaska's Seward Peninsula. The period of operations is to begin on February 1st and may continue for so long as there remains one foot of snow pack and one foot of ground frost throughout the area of operations; but, in no event is the period of operations to extend into spring breakup. Should Kigluaik Adventures engage in operations in 2009, it is limited to no more than 225 visitor use days. The 225 visitor use days are equivalent to three excursions into the field of five day duration each with 8 clients and 7 support personnel on each excursion, (3 X 5 X (8 +7)) = 225. For permitting purposes, 2009 will not constitute the first full year of operations. Ingress and egress will be accomplished by one Hagglund Bv 206 and up to three support snowmobiles. Routing for ingress and egress will consist of all green lines on Figure 1. Bering Straits Native Corporation, d/b/a Kigluaik Adventures seeks ingress and egress into the Kigluaik Mountains for the purpose of conducting snow cat touring and skiing operations.

Subsequent years of operations: The Bureau of Land Management proposes to issue Bering Straits Native Corporation, d/b/a Kigluaik Adventures, a Special Recreation Permit granting it ingress and egress into the federally *administered* public lands within the Kigluaik Mountain Range on Alaska's Seward Peninsula. The period of operations is to begin on February 1st and may continue for so long as there remains one foot of snow pack and one foot of ground frost throughout the area of operations; but, in no event is the period of operations to extend into spring breakup. Ingress and egress will be accomplished by one Hagglund Bv 206 and up to three support snowmobiles; *Provided* and as proposed by the applicant, ingress and egress routing (the green line routes on Figure 1) are reduced by approximately 30% after the first full year of operations (presumed to be 2010) and there is no land, resource or environmental degradation directly attributable to a prior year's operations.

A more thorough discussion of the proposed action and specifications regarding the Hagglunds Bv 206 are provided at Appendixes A through C, which are incorporated herein as if fully set forth.

2.2. No Action Alternative – Denial of a Special Recreation Permit

The Bureau of Land Management proposes to deny Bering Straits Native Corporation, d/b/a Kigluaik Adventures, a Special Recreation Permit granting it ingress and egress into the Federal administered public lands within the Kigluaik Mountain Range on Alaska's Seward Peninsula by one Hagglund Bv 206 and three support snowmobiles.

2.3. Alternatives eliminated from detailed study

2.3.1. Exclusion of Mount Osborn Area of Critical Environmental Concern

For the initial year of operations and in subsequent years of operation: The Bureau of Land Management proposes to issue Bering Straits Native Corporation, d/b/a Kigluaik Adventures, a Special Recreation Permit granting it ingress and egress into federally *administered* public lands within the Kigluaik Mountain Range on Alaska's Seward Peninsula. The period of operations is to begin on February 1st and may continue for so long as there remains one foot of snow pack and one foot of ground frost throughout the area of operations; but, in no event is the period of operations to extend into spring breakup. Ingress and egress will be accomplished by one Hagglund Bv 206 and up to three support snowmobiles. Ingress and egress routing will consist of all green lines on Figure 1, exclusive of the Mount Osborn Area of Critical Environmental Concern. Bering Straits Native Corporation, d/b/a Kigluaik Adventures seeks ingress and egress into the Kigluaik Mountains for the purpose of conducting snow cat touring and skiing operations.

This alternative was eliminated from detailed study as it is anticipated that the period of operations will be limited to spring of each year when there is a minimum of one foot of snow pack and one foot of ground frost as well as substantial ice formation (a factor of feet) upon the lakes containing the genetically isolated arctic char which form the basis for the Area of Environmental Concern designation and will therefore have no adverse impact on the scientific values of the ACEC.

2.3.2. Exclusion of Mount Salmon Lake - Kigluaik Special Recreation Management Area

For the initial year of operations and in subsequent years of operation: The Bureau of Land Management proposes to issue Bering Straits Native Corporation, d/b/a Kigluaik Adventures, a Special Recreation Permit granting it ingress and egress into federally *administered* public lands within the Kigluaik Mountain Range on Alaska's Seward Peninsula. The period of operations is to begin on February 1st and may continue for so long as there remains one foot of snow pack and one foot of ground frost throughout the area of operations; but, in no event is the period of operations to extend into spring breakup. Ingress and egress routing will be accomplished by one Hagglund Bv 206 and up to three support snowmobiles. Ingress and egress routing will consist of all green lines on Figure 1, exclusive of the Salmon Lake – Kigluaik Special Recreation Management Area. Bering Straits Native Corporation, d/b/a Kigluaik Adventures seeks ingress and egress into the Kigluaik Mountains for the purpose of conducting snow cat touring and skiing operations.

This alternative was eliminated from detailed study as it would have substantially the same affect on the physical, natural and human environment as the no action alternative.

2.4. Public Participation[8]

A notice letter was mailed to thirteen recipients on the Seward Peninsula ranging from ANCSA Native Corporations, to Tribal Councils and to individuals. The letter was mailed to the

[8] 43 U.S.C. §1712(f); 40 CFR §1506.6; ANILCA §906(k)(1)(B); 43 CFR §2650.1(a)(2)(i)

recipients on or about January 30, 2009. No written comments were received from the thirteen recipients. One telephonic comment was received indicating that the lands involved were once the traditional lands of the indigenous peoples of Mary's Igloo. The text of the January 30, 2009 notice letter appears at Appendix D.

2.5. Issues of Environmental Concern

There are two levels of human intrusion into the environment associated with the proposed action: ingress and egress onto the public lands of the Kigluaik Mountains and skiing the slopes of the Kigluaik Mountains. The human intrusion associated with skiing the slopes of the Kiglauik Mountains will have no effect on the physical or natural environment and will not be discussed further in this document, 40 CFR §1500.4(c).. Therefore, this document focuses on the consequences associated with the use of a Hagglunds Bv 206 for ingress and egress onto the public lands of the Kigluaik Mountains.

3.0. AFFECTED ENVIRONMENT

3.1. Ecosystem Provinces[9]

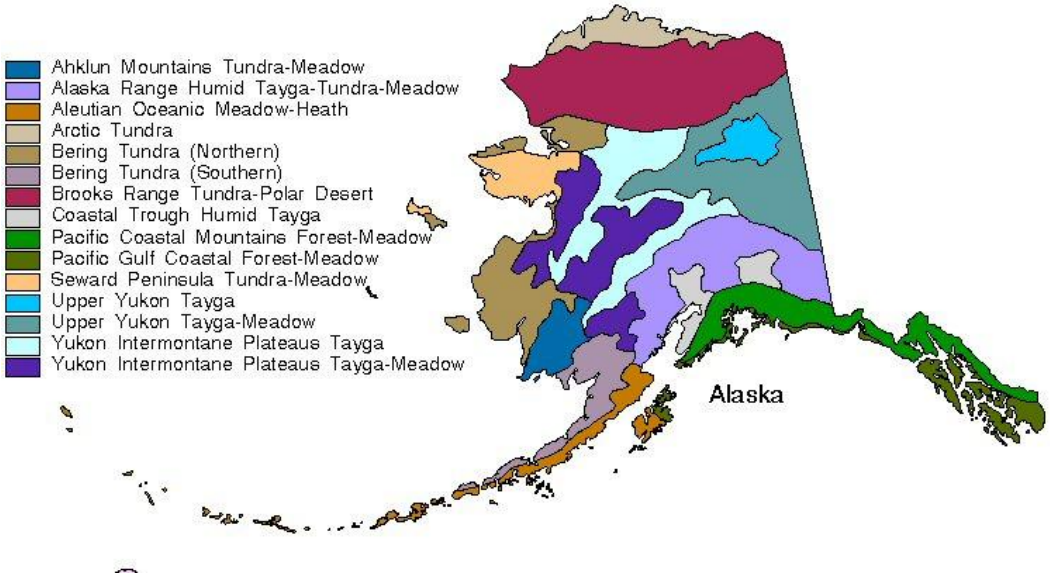


Figure 2 Alaska's Ecosystem Provinces

The Seward Peninsula Tundra-Meadow Ecosystem Province will be impacted by the *specialized recreational uses* discussed in this document.

Land-surface form.--This area contains extensive uplands of broad convex hills and flat divides 500-2,000 ft (150-600 m) high, cut by sharp V-shaped valleys. Isolated groups of rugged glaciated mountains with peaks 2,500-4,700 ft (800-1,400 m) in elevation reach above coastal lowland and interior basins. The bedrock is chiefly metamorphic, with massive granitic intrusions. Periglacial processes predominate, and ice-wedge polygons are common.

Climate.--The tundra climate is characterized by long, cold winters and short, cool summers. Nome has recorded a minimum temperature of -47F (-44C) and a maximum of 84F (29C). The average January temperature is about 3F (16C), and average temperatures in July are below 50F (10C). Average daily minimum temperatures in winter range from -11 to -2F (-24 to -19C), with an average daily maximum of 3 to 12F (-16 to -11C). Average daily minimum temperatures in summer range from 34 to 43F (1 to 6C), with an average maximum of 55 to 63F (13 to 17C). The growing season is less than 2 months. Fairly heavy snowfall occurs in winter, with even heavier concentrations of rain in summer. Average annual precipitation is about 18 in (460 mm); average annual snowfall ranges from 39 to 78 in (1,000 to 2,000 mm).

[9] Source: http://www.fs.fed.us/colorimagemap/ecoreg1_akprovinces.html

Vegetation.--Vegetation exists in moist and wet tundra communities at lower elevations and alpine tundra communities in the high mountains. Vegetation is primarily composed of sedge tussocks interspersed with scattered willows, …. [alders and dwarf birches].

Soil.--The Inceptisol soils are generally poorly drained and shallow; the entire peninsula is underlain by permafrost. On hillslopes and ridges they are formed in very gravelly residual material over weathered bedrock. At lower elevations, soils are formed mainly in colluvial and alluvial sediments.

Fauna.--Arctic foxes and Alaska hares are common here, and polar bears are often seen. Ribbon seals are characteristic of areas offshore. Reindeer were introduced at the turn of the century to provide an additional food source for people. Musk ox were introduced in 1970.

Spectacled eiders, ruddy turnstones, and black turnstones are common breeding birds in the lowland tundra of this province. The rare arctic loon, which breeds only in western Alaska, is characteristic of this region. The only known breeding grounds of the very rare bristle-thighed curlew extend throughout this region.

The lands in North Shaktoolik, Paragraph 1.1.10., West Koyuk, Paragraph 1.1.11., Kwiktalik Mountains, Paragraph 1.1.12., Klokerblok Hills, Paragraph 1.1.13., supra, and Solomon East, Paragraph 1.1.14., are within this Ecosystem Province.

3.2. The Kigluaik Mountains[10]

The rugged and glaciated Kigluaik Mountain massif, approximately 50 km north of Nome, projects above the otherwise relatively subdued topography of the Seward Peninsula, Alaska, with relief of 600 to 1000 m. Because of this relief and its position, the massif bears the few small verified Holocene glaciers and Holocene moraines of central western part of the state. Nevertheless, the area contrasts with the more glacierized high polar climatic setting of the Brooks Range to the north and the mountain arcs peripheral to precipitation sources in the Gulf of Alaska to the south.

The Kigluaik massif covers only 1850 km2 and stretches 75 km east-west, but rises prominently to over 1400 m among rolling uplands of the southwestern Seward Peninsula where it is the highest of three Pleistocene mountain glacier centers. Located along the axis of a broad, fault-bounded antiform, the mountains are underlain by Precambrian and lower Paleozoic metamorphic rocks intruded by Cretaceous granite. These rocks are cut by deep U-shaped glacial valleys as well as cirques and sharp cols and aretes. The Kigluaik Mountains lie just within the northern boundary of the zone of discontinuous permafrost and are characterized by tundra vegetation. The spruce and birch [boreal] forest line is about 100 km to the east.

[10] Calkin, et. al. 1998. Glacier Regimes, Periglacial Landforms, and Holocene Climate Change in the Kigluaik Mountains, Seward Peninsula, Alaska, U.S.A., *Arctic and Alpine Research*, 30: 154-165 (citations omitted).

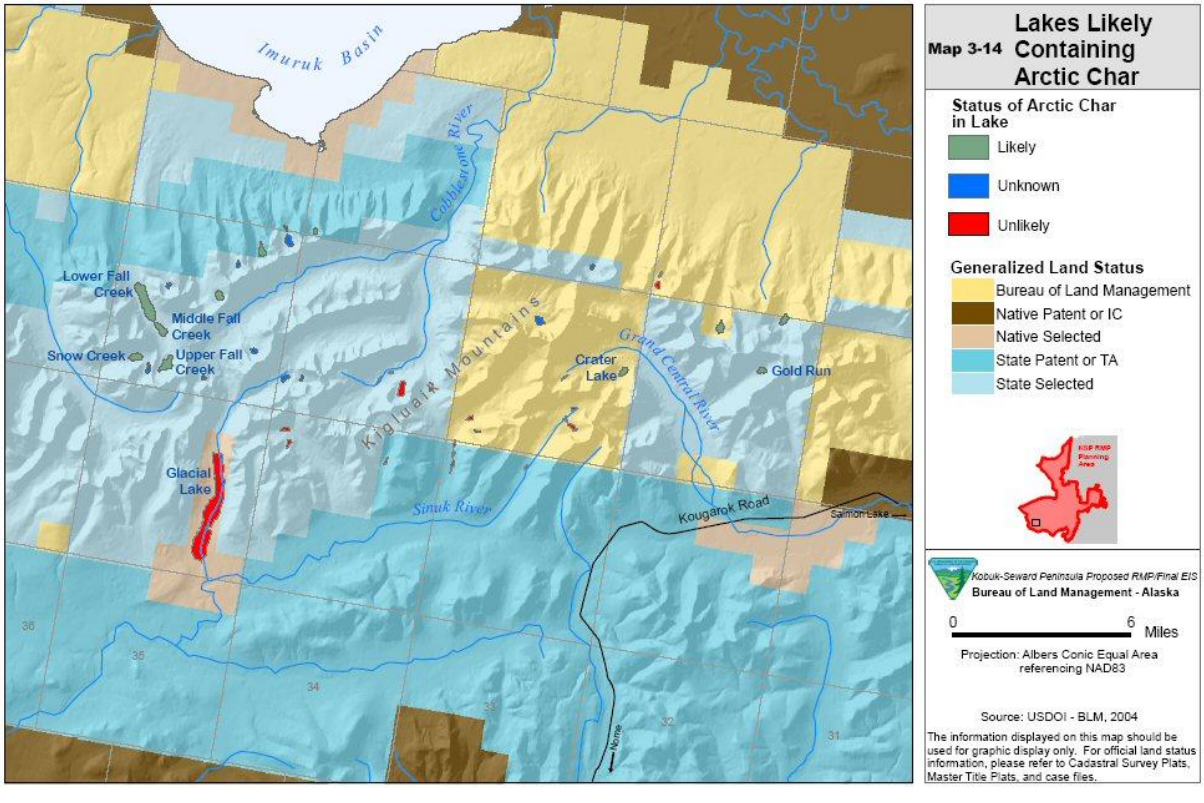


Figure 3 Kigluaik Mountain lakes containing Arctic Char

Lakes in the Kigluaik Mountains are situated in glacially derived, steep-walled basins with elevations ranging from 1,000 to 1,672 feet above sea level, Figure 3. Ridge lines rise sharply from most lakes, and surface and ground water percolates down the basin into and out of the lakes. The lakes are ice-free between late-July to late-September. Small seeps, springs, and snow melt feed most of the lakes. The outlet streams are shallow high gradient systems with predominantly boulder substrates. Three outlets streams: Fall Creek, Snow Creek, and Gold Run Creek have sections were boulders cover the stream and the water flow is subsurface. Massive landslides have buried the first 100-300 yards of the outlets to Snow Creek and Gold Run Lakes; although the streams resurface beyond the slides.

The lakes are ultra-oligotrophic: exhibiting low nutrient concentrations, low temperatures, high water clarity, and low biological productivity. Secchi disk readings taken in four of the lakes ranged from 21-35 feet and turbidity values ranged from 0.3 - 0 .6 NTUs. The deep depths of visibility and low turbidity values indicate a very low level of suspended or dissolved material in the water including a lack of planktonic primary production. These low productivity ecosystems are extremely vulnerable to disturbance than a complex one, because species diversity is low and food webs are relatively direct and extremely limiting (Levy 2006).

3.3. Critical Elements of the Human Environment

The following discussion is organized around the Ten Significance Criteria described in 40 CFR §1508.27 and incorporated into BLM's 14 Critical Elements of the Human Environment list (H-1790-1), and supplemental Instruction Memorandums, Acts, Regulations and Executive Orders. There is a fifteenth Critical Element of the Human Environment in Alaska, Subsistence, ANILCA Title VIII, Sections 801 and 802.

3.3.1. Unaffected Critical Elements of the Human Environment

The following Critical Elements of the Human Environment have been analyzed and are either not present or will not be intensely affected by the Proposed Action or the No Action Alternative:

Areas of Critical Environmental Concern[11]
Air Quality
Environmental Justice
Essential Fish Habitat
Farm Lands, Prime or Unique
Floodplains
Invasive, Non-native Species
Native American Religious Concerns
Threatened or Endangered Species

There is no reason to believe that:

a. an endangered or a threatened species is present in the area affected by the proposed action;
b. implementation of the proposed action will jeopardize the continued existence of an endangered or threatened species;
c. implementation of the proposed action will result in the destruction or adverse modification of critical habitat of such species;
d. implementation of the proposed action will jeopardize the continued existence of any species proposed to be listed as endangered or threatened;
e. implementation of the proposed action will result in destruction or adverse modification of critical habitat proposed to be designated for such species;

therefore, no consultation with the U.S. Fish and Wildlife Service is considered necessary pursuant to Section 7 of the Endangered Species Act of 1973, 16 U.S.C. §1536.

Water Quality, Surface & Ground
Wild and Scenic Rivers
Wilderness

3.3.2. Affected Critical Elements of the Human Environment

The following Critical Elements of the Human Environment may be intensely affected by the

[11] See Paragraphs 1.3.1 and 2.3.1

Proposed Action or the No Action Alternative:

Cultural Resources

There are cultural resources in the Kigluaik Mountains associated with mining from the early 20th Century as well as sites of early inhabitants from the pre-contact periods. Several of these sites have been evaluated and found to be eligible to the National Register of Historic Places. Prehistoric and historic sites have been found in adjacent areas where cultural resource surveys have been conducted (the Bendeleben Mountains). The possibility remains that there are unreported and unsurveyed sites in the Kigluaik Mountains.

Invasive, Non-native Species[12]

With increased trade and travel, invasions by introduced vascular plants are becoming commonplace and are widely recognized as one of the most serious threats to biodiversity and to economies. Introduced plants can have wide-ranging negative effects on ecosystems. These include alterations to the physical structure of habitats, nutrient cycling, fertility and productivity, hydrological regimes, and food webs.

Arctic tundra and Taiga habitats have remained relatively insulated from the negative ecological, economic, and social impacts due to invasive non-native plant species. Most non-native plant populations in Alaska are small and largely restricted to areas of human disturbance. However, arctic and boreal habitats are generally subject to significant natural substrate disturbances, making them susceptible to invasion by weedy non-native species that are primarily disturbance specialists. Further, the natural disturbances display high connectivity. Areas of human disturbance may act as foci for invasions into arctic and boreal habitats.

Currently, introduced plants compose a small percentage of the flora and biomass of arctic Alaska. However, weed outbreaks have accelerated in the last five years. Roads and pipelines act as sources and corridors for introduced plants. At river crossings, plants can be easily dispersed into a new, extensive natural corridor system that is also dominated by substrate disturbance.

Subsistence

Sections 801 and 802 of Title VIII of the Alaska National Interest Lands Conservation Act acknowledge that the human population in Alaska is dependent upon natural/subsistence resources. Congress further provides a statutory scheme for protection of those interests. These lands however are state selected and fall outside of the both the statutory and regulatory schemes.

Residents of Nome, Teller and to a lesser extent Brevig Mission are known to use the Kigluaik Mountains for subsistence purposes. For the most part, the resources that were utilized by the residents of the Seward Peninsula in the past are still utilized by the residents of today, albeit harvested with modern technology. Migratory waterfowl are still the primary fresh meat of the spring, and fishing occurs year-round. Caribou, and lately, moose and musk-oxen comprise the primary large land mammals actively hunted in the area. Additionally, small mammals such as

[12] Source: http://akweeds.uaa.alaska.edu/pdfs/AAAS_Invasive_non-native_plants_arctic.pdf

ground squirrel, Arctic hare, snowshoe hare, and muskrat are used both for their meat and fur. Other animals presently harvested from the area include porcupine, marten, red fox, white fox, wolverine, weasel, mink, river otter, wolf, lynx, ground squirrel, hare, and grizzly bear.

Wastes, Hazardous or Solid

There are no known, hazardous wastes on BLM *administered* lands in the Kigluaik Mountains.

Wetlands/Riparian Zones

The riparian vegetation in the river and creek valleys of Kigluaik Watershed is composed of willow, alder, and grasses. These riparian areas are considered to be in properly functioning condition and are generally unaltered from their natural condition. Naturally vegetated riparian areas perform many beneficial functions for aquatic resources and comprise some of the most important and productive habitat on BLM *administered* lands. These riparian functions may be grouped into four broad categories of habitat, water quality, water quantity, and food supply. The complexity, hydraulic resistance, and stability provided by riparian vegetation to streams affects the size, shape, and distribution of the stream channel and habitat features such as pools, riffles, and undercut banks. The riparian vegetation also helps to maintain the hydrologic connectivity between mainstem stream channels, side channels, tributaries, backwater sloughs, and hyporheic (groundwater) zones. Water quality functions performed by riparian vegetation includes fine sediment deposition and filtering of containments, thereby reducing erosion and turbidity while maintaining high water quality required by many aquatic organisms. Riparian habitats also provide leaf litter and detritus to rivers and streams supporting the primary production that is the basis of the aquatic food supply. An example of a riparian food supply is the detritus (decomposed vegetative matter) from decaying leaves, twigs, etc. which fall into the stream and provide a key energy source fueling the base of the aquatic food chain.

3.4. Affected Non-Critical Elements of the Human Environment

The following Non-Critical Elements of the Human Environment may be intensely affected by the Proposed Action or the No Action Alternative:

Recreation

The Kigluaik Mountains sees recreational use from Nome by anglers, hikers and campers. During moose, musk ox and bear hunting season, there are recreation hunters in the area. The Nome Teller and Kougarok Highway provide reasonable access to the Kigluaik Mountains from the west and east during snow free season. Glacier Creek road provides access with All Terrain Vehicles. Snowmobile access is available during the winter months.

Reindeer Grazing Allotments

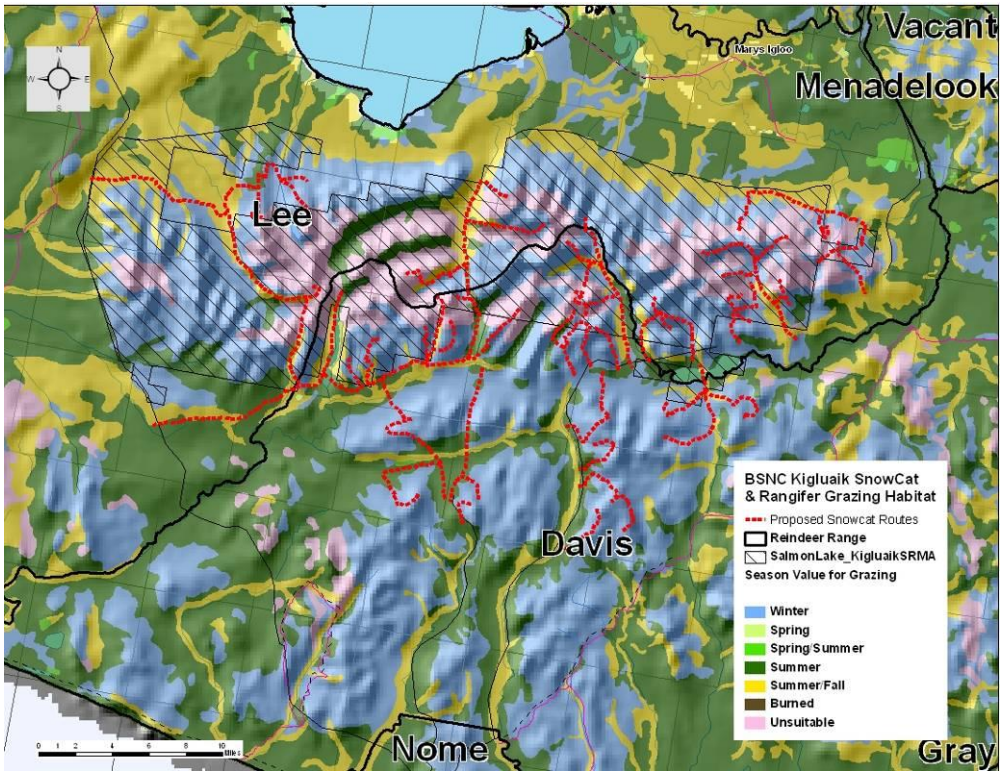


Figure 4 Rangifer grazing habitat

The proposed Snow-cat tours involve two traditional reindeer grazing areas. These permitted areas currently have the greatest number of reindeer on the Peninsula, more than 7,000 collectively. While the overall number of reindeer on the Peninsula is approximately 10,000, there is much potential and social support for growth of the reindeer industry and thus the occupancy of the permitted area which is in the area of the proposed guided Snow-cat tours.

The proposed activity is located in the Ecosystem Province known as Seward Peninsula Tundra-Meadow. Moist and wet tundra communities exist at lower elevations and alpine tundra communities in the high mountains. Vegetation exists in moist and wet tundra communities at lower elevations and alpine tundra communities in the high mountains. Vegetation is primarily composed of sedge tussocks interspersed with scattered willows, …. [alders and dwarf birches]. This vegetation type has a significant lichen component which is critical winter forage for reindeer and caribou.

The lichens most often selected by reindeer and caribou (the "reindeer lichens") are in the genus Cladina. For Alaska these species are: Cladina rangiferina, C. stygia, C. arbuscula, C. mitis and C. stellaris. These Cladina species grow very slowly even under favorable conditions, approximately 5 mm per year. Lichens are opportunistic, going dormant when dry or frozen, and recovering quickly when moistened and above freezing, able to resume photosynthesis. Lichens

in general are more productive in a coastal climate, compared to an interior climate, due to higher relative humidity and precipitation levels.

Reindeer and caribou depend heavily on lichens during the winter. During the spring, summer and fall they forage on a variety of plants, including sedges and grasses, terrestrial forbs, aquatic plants, shrub birch and willow twigs, and even mushrooms. Lichens grow best in a moist environment, and drier conditions adversely affect their growth. Human and/or animal utilization impacts to the dry tundra environment causes dry, brittle lichens to break apart into fragments. Fragmented lichen can easily blow away and desiccate too severely to recover.

Lichens constitute critical winter forage for barren ground caribou (Klein 1991) and consequently, reindeer. Climate warming has been implicated as a factor that may reduce lichen abundance in the tundra ecosystem (Chapin et al, 1995). In fact, experimental warming of research plots in arctic tundra communities by just 1-3º C produced substantial vegetation changes in a single year (Walker et al, 2006). Shrubs and graminoids increased in height and density, resulting in decreased cover of shade-intolerant lichens and bryophytes (Walker et al, 2006).

Special Status Species

A number of BLM-Alaska sensitive plant species have been identified within the Kigluak Mountains, Figure 5.

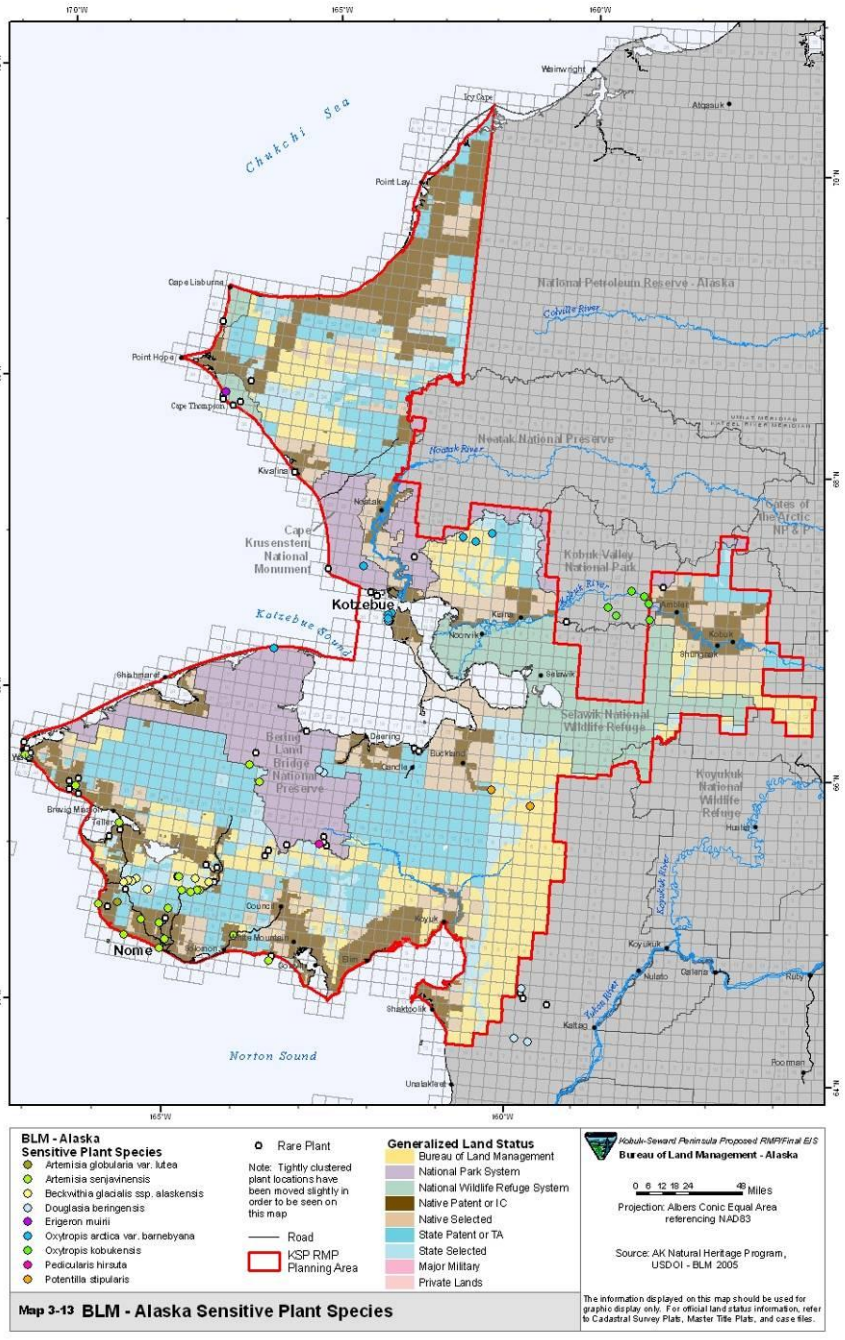


Figure 5 Special Status Plant Species

Vegetation

Arctic tundra is located in the northern hemisphere, encircling the North Pole and extending south to the coniferous forests of the taiga. The arctic is known for its cold, desert-like conditions. The growing season ranges from 50 to 60 days. Soil is formed slowly. A layer of permanently frozen subsoil or permafrost exists, consisting mostly of gravel and finer material. When water saturates the upper surface, bogs and ponds may form, providing moisture for plants. There are no deep root systems in the vegetation of the arctic tundra; however, there are still a wide variety of plants that are able to resist the cold climate. There are about 1,700 kinds of plants in the arctic and subarctic, and these include: low shrubs, sedges, reindeer mosses, liverworts, and grasses, 400 varieties of flowers, crustose and foliose lichen.

Figure 6. Arctic Tundra

All of the plants are adapted to sweeping winds and disturbances of the soil. Plants are short and group together to resist the cold temperatures and are protected by the snow during the winter. They can carry out photosynthesis at low temperatures and low light intensities. The growing seasons are short and most plants reproduce by budding and division rather than sexually by flowering.

Visual resources

Figure 7 Kigluaik mountain valley - winter

The BLM designated Visual Resource Management (VRM) classes for the proposed areas of use. The Kobuk-Seward Peninsula RMP's most stringent VRM in the Kigluaik Mountains is VRM class II objectives. This class II area is the same as the Mt. Osborn ACEC. Management objectives in class II VRM are:

> The objective of this class is to retain the existing character of the landscape. Activities or modifications of the environment should not be evident or attract the attention of the casual observer. Changes should repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape. Changes caused by management activities may be evident but not detract from the existing landscape (Bureau Handbook, H-8410-1, Visual Resource Inventory).
>
> All other areas within the Kigluaik Mountains are class III. Expansive and scenic views of the Kigluaik Mountains and its tributaries are available from high vantage points. There are a few established camps in the area mostly on Native Allotments/Native Corporation owned lands along the Pilgrim and Kuzitrin River corridors.

Wildlife

Habitats within the area have been subjected to limited disturbance in the past and are considered to be in a mostly natural and nearly pristine condition given the road less nature of the area, difficulty in accessing the area, and the low number of permitted activities occurring on BLM-managed lands. The land covered by the permit application, is located within the Alaska Department of Fish and Game (ADF&G) Game Management Subunit 22C and 22D and is inhabited by many wildlife species including, but not limited to moose, muskox, grizzly bear, caribou, wolf and wolverine. Only those wildlife species considered important as a subsistence resource, economically important to the region, or otherwise requiring management emphasis are addressed.

(1) Muskoxen

Muskoxen are indigenous to northwestern Alaska but disappeared before or during the nineteenth century. Muskoxen were reintroduced to northwestern Alaska in 1970 on both the Seward Peninsula and near Cape Thompson. Since that time, the Seward Peninsula population has grown rapidly and extended its range to occupy suitable habitat throughout the peninsula.

The Seward Peninsula population is currently expanding east into the Nulato Hills and the Selawik and Yukon River drainages. The 2005 population was estimated at 2,387 animals. Population density is highest on the western Seward Peninsula (Persons 2003a).

Favored habitat includes windblown ridges during the winter and riparian areas during the summer. When snow depth is greater than 12 inches, muskoxen move to areas where snow cover is minimal such as exposed ridges. Vegetation in these areas is typically sparse. During the winter muskoxen survive on body-fat reserves and minimize movement to conserve energy. In the summer forage is plentiful and muskoxen build fat reserves. Known herds are found within the drainages and slopes within the Kigluaik Mountains.

Figure 8 Muskoxen, Grand Central Valley, March 2009

(2) Moose

Moose are an important subsistence resource and are widely distributed throughout the Seward Peninsula. Moose are most abundant in riparian areas that contain willow and birch shrubs. In general, their distribution is determined by food, cover and seasonal snow depths.

Moose were first documented in the eastern part of the Seward Peninsula in the 1920s. By the 1960s they occupied most areas of suitable habitat within the Seward Peninsula. Currently, moose populations are low or declining in State of Alaska Game Management Units 22A, 22B, 22D, and possibly 22E. Other surveys indicate either very low recruitment rates or low population levels in other parts of the unit, indicating that the population is well below Alaska Department of Fish and Game's management goals.

Moose winter habitat condition in the area is not known to be a limiting factor to moose populations. However, monitoring of browse has been very limited. Moose habitat quality limits distribution and numbers of moose within the area. Some parts of the Seward Peninsula are marginal moose habitat. However, moose are widely distributed in the Kigluiak Mountain drainages.

(3) Caribou

The Western Arctic Caribou Herd ranges throughout the area, calving in the National Petroleum Reserve-Alaska, and wintering in the Nulato Hills and the eastern and central portions of the Seward Peninsula. This Herd ranges over about 140,000 square miles in northwestern Alaska.

In the early 1970s, the Herd population was estimated at 243,000 animals. By 1976, the population had declined to an estimated 75,000 animals. From 1976 to the present, the Herd has grown substantially. Census data from 1996 and 1999 resulted in population estimates of 463,000 and 430,000 caribou, respectively (Dau 2003b). A census completed in 2007 resulted in the current estimated population size of 377,000 caribou (Dau 2007x).

Caribou migrate seasonally between their calving areas and summer and winter ranges to take advantage of seasonally available forage. In general, the winter diet of caribou consists predominantly of lichens, with a shift to vascular plants during the spring (Thompson and McCourt 1981).

Calving ground locations may shift gradually over years or change abruptly due to environmental conditions. Since the mid-1970s, the Herd has calved primary north and east of the Seward Peninsula (Dau 2003b). Typically, most pregnant cows reach the calving grounds by late May.

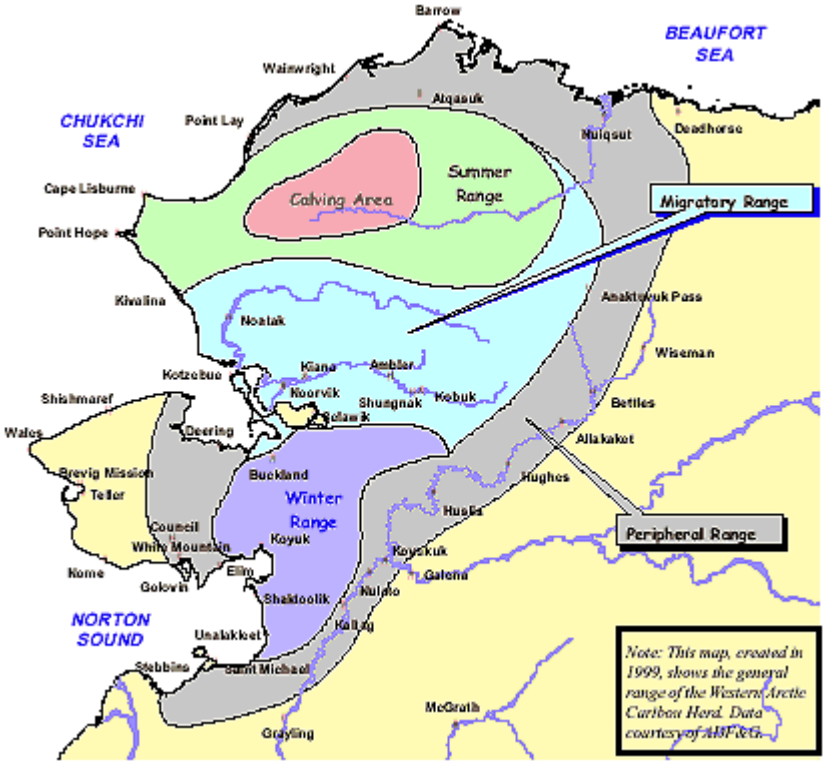


Figure 9 Western Arctic Caribou Herd Range in the vicinity of the Seward Peninsula

The winter range of the Herd has changed over time and varies from year to year. Before the mid-1970s a substantial portion of the Herd wintered north of the Brooks Range or near Wiseman and Anaktuvuk Pass. Since the mid-1970s the primary winter range of the Herd has been south of the Brooks Range along the northern fringe of the boreal forest. Between the mid-1980s and mid-1990s a large portion of the Herd consistently wintered in the Nulato Hills. Beginning in 1996, the Herd began shifting its winter range west from the Nulato Hills onto the Seward Peninsula with minor migration in the vicinity of the Kigluaik Mountains.

(4) Brown Bear

Population densities vary depending on the productivity of the environment. An aspect of bear habitat is the availability of prey species. Low or declining moose and fish stocks in the area may adversely affect bear populations. The current condition of brown bear habitat in the planning area has not been quantified. For the most part, the habitat is in a natural condition. No threats to the quality of habitat are known.

According to Alaska Department of Fish and Game, bear densities in Alaska Game Management Unit 22 have increased since 1991 and are currently higher than the densities found during a study in the early 1990s (Persons 2003b). There is no other quantitative data to estimate population trend. Local residents believe that brown bear populations have increased since the 1940s and 1950s (Dau 2003x). Grizzly bear dens are known to be present in the Kigluaik

Mountains.

(5) Wolf

In general, wolves are found throughout the Seward Peninsula wherever adequate numbers of prey species are found. In most of Alaska, moose and/or caribou are their primary food. During summer, small mammals including voles, lemmings, ground squirrels, snowshoe hares, beavers, and occasionally birds and fish supplement their diet (ADF&G 1994b). Wolves are resident in the Kigluaik Mountains as a consequence of the domestic reindeer herds.

Research has never been conducted in Alaska Game Management Unit 22 to assess wolf distribution and population trend. Estimates of wolf distribution, population trend, harvest, and human use data are obtained from sealing certificates and observations by staff, reindeer herders, and other local residents (Gorn 2003). Wolf abundance in the Nulato Hills and Seward Peninsula is dependent upon the presence of caribou, with abundance increasing from October to May when caribou are present. As caribou have extended their winter range west, wolf numbers have also increased (Gorn 2003). Reports from local residents, statewide trapper surveys, and observations by ADF&G staff indicate that wolf numbers have increased on the Seward Peninsula west of and including the Buckland River drainage (Gorn 2003, Dau 2003c).

(6) Migratory Birds

Numerous species of raptors inhabit the area including golden eagle, peregrine falcon, osprey, gyrfalcon, northern harrier, Merlin, rough-legged hawk, great horned owl, snowy owl, and short-eared owl. Many of these species are uncommon to rare due to a lack of suitable habitat. Those species dependent upon forested habitats are generally most common in the eastern portions of the Seward Peninsula.

The Boreal Partners in Flight Working Group (1999) has identified the following priority species for western and northern Alaska: gyrfalcon, snowy owl, gray-cheeked thrush, varied thrush, blackpoll warbler, golden-crowned sparrow, Smith's longspur, McKay's bunting, rusty blackbird, and hoary redpoll. Many priority species depend upon shrub habitats, which is likely the most important land bird habitat in western Alaska. The Boreal Working Group developed a Landbird Conservation Plan for Alaska Biogeographic Regions in 1999.

The overall goal of the Landbird Conservation Plan is to keep land birds well distributed across the landscape in Alaska. The primary conservation action recommended is broad scale monitoring of priority species. No imminent threats have been identified for these species.

Because migratory birds occupy a wide variety of habitats, it is difficult to generalize on habitat condition. However, most of the BLM-*administered* land is in a natural state, permitted activities are minimal, and no specific threats to the quality of the habitat are known. The birds begin their migration onto the Seward Peninsula in late May.

4.0. ENVIRONMENTAL CONSEQUENCES

4.1. Affected Critical Elements of the Human Environment

The following Critical Elements of the Human Environment may be intensely affected by the Proposed Action or the No Action Alternative:

Cultural Resources

For the most part the temporary nature and seasonal period of use are unlikely to result in sufficient surface disturbance as to constitute a serious threat to any cultural remains that may be located in the area.

Figure 10 Wild Goose Pipeline, Crater Lake in background

However, care should be exercised to not disturb known cultural resources of the area. In particular this applies to the Wild Goose Pipeline which is eligible to the National Register of Historic Places. It is a unique water development from early 20th century mining operations on the Seward Peninsula. The Wild Goose pipeline is an example of a water line constructed of wood stave pipe which remains relatively intact given its age and the elements. It lies on the tundra in Grand Central River Valley and originates at Crater Lake and is in a fragile state, *see* Figure 3. This historic pipeline could be damaged by travel over it especially at this location. A snow survey conducted by BLM personnel on March 3, 2009 indicates that snow depth at Crater Lake is relatively shallow.

Figure 6 Wild Goose Pipeline hoops

Invasive, Non-native Species

Executive Order 13112, dated February 3, 1999, provides that each Federal Agency shall "… *prevent the introduction of invasive species*; … and not authorize … actions that … are **likely** to cause or promote the introduction or spread of invasive species in the United States … *and that all feasible and prudent measures to minimize risk of harm will be taken* …." [Emphasis added.]

Mud and debris on equipment and personal field gear may carry seeds of invasive, noxious and/or non-native plants from work on other land bases from outside of the Seward Peninsula Tundra-Meadow Ecosystem Province thereby posing a threat to the ecosystem's integrity and biodiversity.

Subsistence

The lands to be affected are State Selected. They do not meet the definition of Federal Public Lands under ANILCA sec. 102 (3) and do not fall under the authority of the Federal Subsistence Board and Subsistence Management Regulations for the Harvest of Fish and Wildlife on Federal Public Lands in Alaska.

Wastes, Hazardous or Solid

The Hagglunds BV-206 will utilize fuel and other hazardous materials such as oil and batteries, oil/grease, antifreeze, and hydraulic fluid. A small amount of human waste and wastewater will be generated on a daily basis as well as non hazardous waste material (trash). Refueling is anticipated off of BLM - *administered* lands. Oil leaks, improper refueling or mechanical break

downs can lead to contamination of vegetation, soil and water. However the design of the vehicle is such that such releases are unlikely given that all mechanics are within the vehcile's sealed cab. There is the potential of harm to the environment from improper management of human waste, wastewater, and trash.

Wetlands/Riparian Zones

Experience in evaluating and monitoring winter drilling programs in National Petroleum Reserve-Alaska since the winter of 1999-2000 has shown that hardened winter trails create few lasting impacts to the wetlands, floodplains, and riparian zones (BLM 2008). The applicant has identified the proposed routes but exact skiing locations and routes taken will vary with snow depth, prevailing wind, ice and other climatic and environmental factors.

The majority of proposed routes are utilizing river and creeks as travel corridors. The proposed river and creek travel corridors are classified as riparian areas, wetlands, and also include the associated floodplains. There are no proposed travel routes that cross lakes known to contain Arctic char. The proposed operations will occur only during winter, when soils, wetlands, and riparian habitat are frozen and snow covered. The Hagglunds Snow-cat is a low-ground-pressure, rubber-tracked vehicle with a specific ground pressure of less than 2 pounds per square inch. Relatively minor, impacts are expected from travel (e.g., scuffing on bare ground, and riparian vegetation crushing and breakage).

The Proposed Action's requisite snow depth or ground frost depth are sufficient to protect water bodies and water quality. Potential impacts of the proposed action on fish and their habitat would be minimal. Additionally, Fish Habitat permits are required for stream crossings that can impact fish. The Alaska Department of Fish and Game makes decisions on fish stream crossings specifically to protect any fish that may be present.

4.2. Affected Non-Critical Elements of the Human Environment

Recreation

The Proposed Action would increase the number of people recreating in the Kigluaik Mountains. There may be conflicts between user groups (i.e. local cross country skiers, campers and snowmobile riders and those utilizing the commercial services proposed) due to the increased recreational level and perhaps competition over snow conditions (powder, no trails, etc.). This competition may result in loss of outdoor experience and animosity between commercial recreational users and local user groups.

Reindeer Grazing Allotments

Snow-cat operations across reindeer grazing allotments have the potential of providing avenues which may increase predation on reindeer herds. Failure to appreciate the interests of reindeer herders have the potential of adversely affecting herding operations, including habitat integrity, calving, herd integrity, etc.

Special Status Species

The Proposed Action's requisite snow and ground frost depth and the restricted period of use are

sufficient to protect special status species, s*ee Vegetation* discussion that follows.

Vegetation

Winter travel by off road vehicles impacts vegetation through snow compaction and obviously more so in the absence of snow cover. Snow compaction increases with the number of passes over the snow and is affected by factors such as weight and the width of the point of contact with the snow. Snow compaction lowers species diversity and can destroy individuals and reduce plant populations in areas of heavy use. Snow compaction may cause a shift in the abundance of one species of plant in favor of a more tolerant species.

Several studies reveal that snow compaction from track vehicles designed for travel over snow can have harmful impacts on vegetation, including saplings, shrubs, and grasses. Saplings, pine, and white spruce have a high sustained rate of severe damage, and even death, after as little as one or two passes by such vehicles.[13]

Snow compaction affects vegetation productivity and growth, organic matter decomposition, humus formation, and microbial activity, by decreasing soil temperature and slowing snowmelt.[14]

When air spaces in snow are compacted, the insulating capacity of the normal blanket of snow is

[13] Neuman, P.W. and H.. Merriam. Ecological Effects of Snowmobiles. The Canadian Field-Naturalist. 86:207-212. 1972.
Wanek , W.J. 1971a..
Wanek, W.J. A Continuing Study of the Ecological Impact of Snowmobiling in Northern Minnesota (Final Research Report for 1971-1972. The Center for Environmental Studies. Bermidji State College, Bemidji, MN. 1973.

[14] Aasheim, R. Snowmobile Impacts on the Natural Environment. *In* Andres, R.N.L., and P. Nowak. Off-Road Vehicle Use: A Management Challenge. U.S. Department of Agriculture, Office of Environmental Quality, Washington, DC. 1980.
Keddy, P.A., A.J. Spavold, and C.J. Keddy. Snowmobile Impact on Old Field and March Vegetation in Nova Scotia, Canada: An Experimental Study. Environmental Management. 3(5):409-415. 1979.
Wanek, W.J Snowmobiling Impact on Vegetation, Temperatures and Soil Microbes. *In* Chubb, J., 1971. Proceedings of the Snowmobile and Off the Road Vehicle Research Symposium. College of Agriculture and Natural Resources, Department of Park and Recreation Resources, Recreation Resources and Planning Unit. Tech. Rep. 8. Michigan State University, East Lansing, MI. 1971.
Wanek, W.J. 1971a.
Wanek, W.J. A Continuing Study of the Ecological Impact of Snowmobiling in Northern Minnesota (Final Research Report for 1971-72). The Center for Environmental Studies. Bemidji State College, Bemidji, MN. 1972.
Wanek, W.J. A Continuing Study of the Ecological Impact of Snowmobiling in Northern Minnesota (Final Research Report for 1971-72). The Center for Environmental Studies. Bemidji State College, Bemidji, MN. 1973.
Wanek and Schumacher. 1974.
Wanek, W.J. The Ecological Impact of Snowmobiling in Northern Minnesota. Environmental Impact Studies. Division of Science and Mathematics, Bemidji State College, Bemidji, Minnesota. Undated.

reduced and the snow conducts cold air to the ground more effectively, subjecting vegetation to abnormal extremes of temperature. Compacted snow melts more slowly than that on unused areas and retards spring, plant growth. Delayed snowmelt may also postpone seed germination and delay plant flowering. Snow compaction also reduces the number of bacteria and fungi under compacted soil and affects the growth rate of vegetation dependant on those organisms.

Snow compaction can also prevent microtine rodents from crossing beneath and grazing within a trail bed. As a result, the areas adjacent to the trail bed can be grazed heavily. When this occurs over ice wedges, the wedges can melt more quickly than normal causing subsidence. Compacted snow will also affect drainage patterns during the spring thaw, and can result in a long-term change in vegetation composition within adjacent plant communities. The degree of disturbance resulting from snow compaction depends upon substrate conditions (particularly moisture), snow cover and the number of passes made over the snow.

Disturbance of the vegetation mat over ice rich soils, whether from winter kill or mechanical means, permits heat to reach the permafrost underneath, resulting in an increased depth of thaw. If there is very little ground ice, plant growth can stabilize the surface and major subsidence is not a concern. If large quantities of ice are in the soil, there is a potential for subsidence and/or thermal erosion. Permafrost will continue to thaw until a new point of stability is reached. If vegetation mat disturbance occurs on a slope, thawed material will flow, leaving a gully. It will then be difficult for natural plant cover to re-establish itself.

Although the effects of snow compaction are of environmental concern; snow compaction is a necessary consequence of winter travel in rural Alaska. In the absence of adequate snow cover and ground frost off road travel with the Hagglunds Bv 206 will damage the vegetation mat that insulates the permafrost. Damage amounting to removal of the vegetation mat will result in melting permafrost. However, the Proposed Action's requisite snow and ground frost depth and the restricted period of use are sufficient to protect the vegetation mat.

Visual resources

One of the consequences of snow compaction is a change in vegetation which becomes visible from the air as a result of a differentiation in vegetation composition. Such changes only occur as a result of repeated travel over the same route as is the case with the running of the various activities associated with the Iditarod Sled Dog Race.

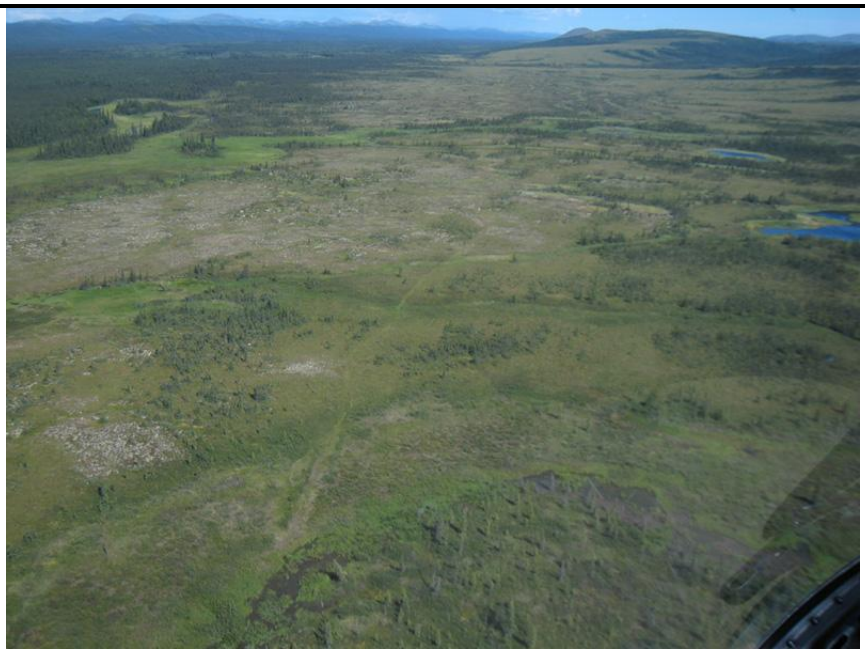


Figure 7 Kaltag Portage 2007

As is the case with vegetation effects, it is assumed that the Proposed Action's requisite snow and ground frost depth and the restricted period of use are sufficient to protect the visual integrity of the terrain.

Wildlife

As with the reindeer herds, the tracks of the Hagglunds Bv 2006 will provide ready routing for predation. The period of proposed use in the Kigluaik Mountains will witness the advent of spring. During the spring the Western Arctic Caribou Herd will begin its migration east off of the Seward Peninsula, the bear population will end its period of hibernation, and wolves will be giving birth to pups in their dens. Migratory birds will be in flight from the south and Muskoxen will be calving. A reasonable degree of care is required during the season so as not adversely affect the life-cycle of wildlife life on the Seward Peninsula.

4.3. RECOMMENDED MITIGATION MEASURES OR STIPULATIONS

Bering Straits Native Corporation's operation of the Hagglunds Bv 206 on Federal public lands is restricted as follows.

1. Bering Straits Native Corporation, d/b/a Kigluaik Adventures', period of operations is to begin on February 1st and may continue for so long as there remains one foot of snow pack and one foot of ground frost throughout the area of operations; but, in no event is the period of operations to extend into spring breakup.
2. As proposed by the applicant, routing, as depicted in Figure 1, for ingress and egress into the federally *administered* public lands within the Kigluaik Mountain Range on Alaska's Seward Peninsula with the Hagglunds BV 206 will be reduced by 30% after the first full year of operations (presumably 2010).

3. Bering Straits Native Corporation, d/b/a Kigluaik Adventures will obtain the necessary permitting from the State of Alaska including permitting under its Generally Allowed Uses regulations with particular emphasis on the Hagglunds Bv 206's gross vehicle weight.
4. To prevent unnecessary or undue degradation of the land, its resources or the environment:
    a. Harassment of wild and/or domestic animals is prohibited
    b. Snow cat operations within one mile of muskoxen are prohibited
    c. Interference with reindeer herding operations is prohibited.
    d. A number of the lakes in the Kigluaik Mountains contain genetically isolated Arctic char. It is for this reason that the Kigluaik Mountains were designated an Area of Critical Environmental Concern.

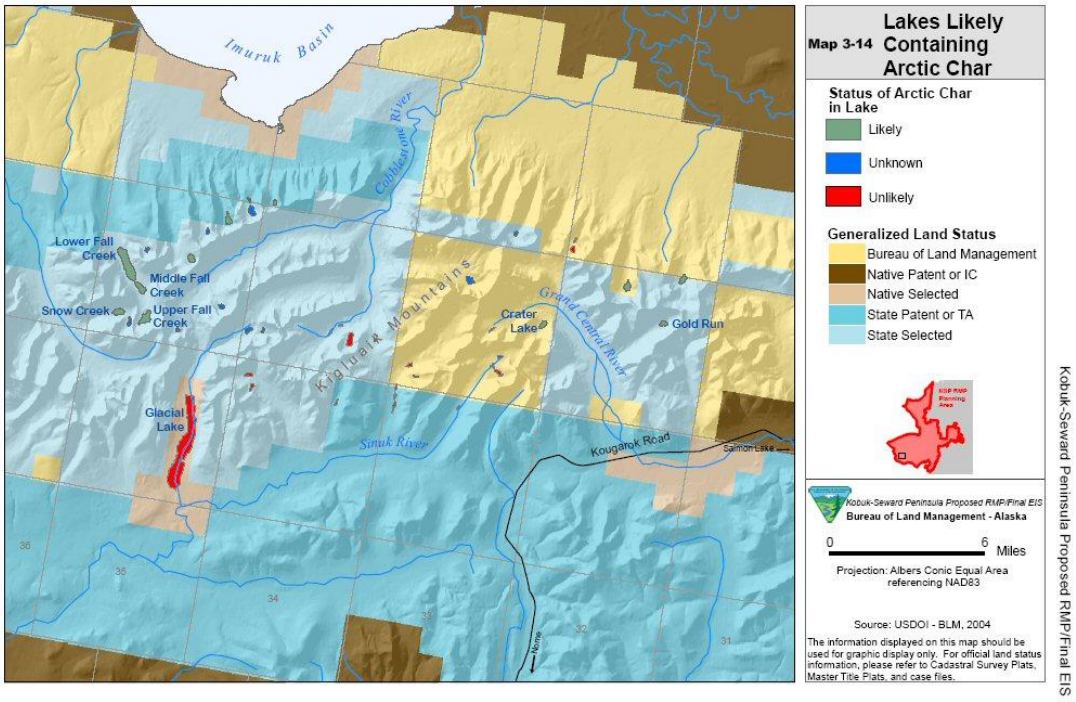


Figure 8Arctic Char Map

Therefore, Bering Straits Native Corporation d/b/a Kugluaik Adventures must not operate the Hagglunds Bv 206 dual cab snow cat in such a manner as to modify the lakes that are likely to contain Arctic Char, *see* Figure 8., or their watersheds in such a way that such modification results in adversely altering the hydrological, chemical, physical or biological integrity of the lakes; or impacting or diminishing the habitat quantity and quality of the aquatic and riparian ecosystems and watershed functions so that fish populations of the lakes are reduced below their natural potential.

5. To prevent water quality degradation, alteration of drainage systems, significant rutting, ground disturbance, or thermal erosion:

a. Every effort will be made to avoid or minimize use of the Hagglunds Bv 206 dual cab snow cat within riparian zones.
b. Crossing of water bodies with the Hagglunds Bv 206 dual cab snow cat will be accomplished at 90 degree angles to shore lines.
c. Travel on water bodies with the Hagglunds Bv 206 dual cab snow cat is restricted to situations where the ice sheet is of sufficient depth to safely support the Hagglunds Bv 206 dual cab snow cat.
d. Travel on water bodies with the Hagglunds Bv 206 dual cab snow cat is further restricted to situations where the Hagglunds Bv 206 dual cab snow cat has adequate side clearance to avoid contact with stream banks or the banks of other water bodies.
e. Disturbance of tundra mat is prohibited.
f. Disturbance of riparian zone vegetation is prohibited.
g. Disturbance of riparian zone soils is prohibited.
h. Every effort will be made to avoid the Wild Goose pipeline in the Grand Central Valley and in no event will Bering Straits Native Corporation d/b/a Kigluaik Adventures disturb the Pipeline.
i. Wildlife viewing will be conducted in such a manner as not to disturb the animals with a minimum distance from all calving of one mile regardless of species.
j. Human waste should be brought out of the field or the use of a pit privy in compliance with Alaska Department of Environmental Conservation regulations. These measures will prevent the contamination of ground, surface, and drinking water resources.
k. Fuel must be contained and measures must be taken to prevent spills to public lands and waters.
l. Repetitive use of the same trails from year to year should be avoided.

6. To facilitate monitoring:
    a. Bering Straits Native Corporation d/b/a Kigluaik Adventures will record the GPS track of all ingress and egress routes it takes into the Kigluaik Mountains with the Hagglunds Bv 206 dual cab snow cat and provide the BLM with the data associated with those routes at the end of each snow cat touring and skiing season.
7. It is stipulated and agreed that the routing for the Hagglunds Bv 206 dual cab snow cat depicted in Figure 1 is preliminary; that the actual routing will be substantially less; and that subsequent routing requests will also be substantially less. It is further stipulated and agreed that permit renewal beyond the 2009 season of use is contingent upon substantially reduced routing, route rotations, etc. and other appropriate measures aimed at preservation of watershed, soil and vegetation integrity.

5.0 CONSULTATION AND COORDINATION

5.1. List of Preparers

The following BLM specialists participated in the preparation of this analysis:

Donna Redding	Cultural Resources
Laurie Thorpe	Vegetation, Invasive/Non-Native Species; Reindeer Grazing
Geoff Beyersdorf	Subsistence/Wildlife
Doug Ballou	Recreation/Visitor Services, Visual Resources
Bruce Seppi	Threatened or Endangered Species
Tim Sundlov	Fisheries, Wetlands/Riparian zones
Thomas Sparks	Nome Field Station
James Moore	Planning and Environmental Coordinator
Larry Beck	Hazardous Waste and Hagglunds Bv 206

5.2. References

USDA FS, (2002). Managing Degraded Off-Highway Vehicle Trails in Wet, Unstable, and Sensitive Environments. 2E22A68 – NPS OHV Management.

5.3. Agency and Public Consultation

Alaska Department of Fish and Game
Alaska Department of Natural Resources
Native corporations with interests in selected lands along the route.

Appendix A Permit Application and Plan of Operations

BERING STRAITS NATIVE CORPORATION

November 4, 2008

Thomas Sparks
Bureau of Land Management
Nome Field Station
P.O. Box 925
Nome, AK 99762

Mr. Sparks:

I am enclosing a Special Recreation Application and Permit (Form 2930-1) for agency consideration. Kigluaik Adventures is a business owned by BSNC and was established to facilitate visitor access to BSNC-owned and public lands in the Seward Peninsula area. As you well know, BSNC lands are located adjacent to some of the most scenic and unspoiled public lands in Western Alaska. We would like to provide outdoor enthusiasts, primarily backcountry skiers, an opportunity to visit and appreciate the region while maintaining those qualities that make this area one of the "best kept secrets" in the State.

The attached application and accompanying materials explain Kigluaik Adventures' (KA) plan for Snowcat tours and skiing in the Kigluaik Mountains. KA does not anticipate more than three groups of six to eight clients each during the spring season of 2009. No camps will be placed on public lands, and staging for the tours will occur on private lands. We feel a cautious approach is necessary for this new endeavor to insure customer safety and to evaluate any impacts, positive or negative, that this operation may have on the community and resources. As you'll find when reviewing the application the attached maps have numerous proposed routes for snowcat access. These should be viewed only as *possible* routes, and the actual number of trails used for snowcat access will be far less than represented on the map. As stated in the Operations Plan any trails used will be mapped and submitted to your office at the end of each season.

KA will submit a certificate of insurance, a more detailed operations plan, and any other materials requested by BLM. I look forward to hearing from and please don't hesitate to contact me to discuss this application.

Sincerely,

Matt Ganley
VP Land and Resources
BSNC

Form 2930-1
(February 2005)
(Formerly 8370-1)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0119
Expires: June 30, 2007

SPECIAL RECREATION APPLICATION AND PERMIT

(43 U.S.C 1201; 43 U.S.C. 1701; 16 U.S.C. 460 L-6(a); and 43 CFR Group 2930)

Permit No.

Instructions: Complete items 1 through 18, and return to appropriate Bureau of Land Management (BLM) Office. *(Use additional sheets, if necessary.)*

Type or Print Plainly in Ink

WHEN SIGNED BY AUTHORIZED BLM OFFICIAL, THIS PERMIT AUTHORIZES

1. ☑ New Application ☐ Renewal of Existing Permit

2. Name of Business or Organization: Bering Straits Native Corp./dba Kiglusik Adventures

3. Your Name: Matt Ganley

4. E-mail address *(optional)*: matt@beringstraits.com

5. Social Security Number or Taxpayer Identification Number: 920042240

6. Address *(include zip code)*:
P.O. Box 1008
Nome, AK 99762

7. Phone No. *(include area code)*:
(907)443-5252

8. Fax No. *(include area code)*:
(907)443-2985

9. Applicant is: ☐ Sole Proprietor ☐ Partnership ☑ Corporation ☐ Individual
(If corporation, attach copy of Articles of Incorporation and Certificate unless already on file.)

10. Name(s) and phone number(s) *(include area code(s))* of person(s) authorized to conduct business with BLM concerning the permit.
Matthew Ganley, VP Land and Resources, BSNC (907)632-7197
Jerald Brown , VP BSNC (907)443-4307

11. Application is for *(check all that apply)*: ☑ Commercial ☐ Competitive Event ☐ Organized Groups ☐ Vending ☐ Individual

12. To use the following public lands/related waters *(provide name, legal description and/or attach map)*.
KRM T. 5 S., R. 30 W. through T. 5 S., R. 37 W and T. 6 S., R 30 W. through T. 6 S., R. 37 W., and T. 7 S., R. 30 W. through T. 7 S., R. 37 W.
See Attached Map 1: East and Map 1: West.

13. For the following purpose *(provide full description of activity or event including number of anticipated participants and spectators)*.
Applicant will provide guided snowcat tours and guided snowcat access ski tours in the Kiglusik Mountains and foothills. All tours will begin in Nome, or will begin on BSNC-owned lands within the permitted area.

14. Dates of proposed use: Beginning Date: 02/01/2009 Ending Date:
OR Leave the above dates blank if applying for renewal of multi-year permit.

15. Describe facilities including water and sanitation facilities you intend to provide, attach operations plans, location maps, and insurance certificate prepayment. *(Include your name on each document.)* Operations will adhere to strict LNT (Leave no Trace) principles.

16. Attach the following documents: Operations Plan, Maps, Certificate of Insurance, Prepayment of Fees, and other documents requested by BLM. *(Include your name on each document):*
Operations Plan (Preliminary/Planning Document)--Attached
Certificate of Insurance--to be provided at Agency's request.
Maps of use area denoting potential trails to be used during operations.

17. Do you have a permit with BLM/USFS? ☐ Yes ☑ No If so, where?

17a. Have you had a permit previously? ☐ Yes ☑ No If so, where?

17b. Have you ever been denied or had a permit revoked? ☐ Yes ☑ No If so, where?

17c. Have you forfeited a bond or other security? ☐ Yes ☑ No If so, where?

17d. Are there any pending investigations against you? ☐ Yes ☑ No If so, where?

17e. Have you been convicted of violations regarding natural resources, cultural resources or any activity related to your proposed permit?
☐ Yes ☑ No If so, where?

(Continued on page 2)

APPLICATION REQUIREMENTS

(The conditions and stipulations required by the (BLM) are checked below)

The following must be submitted before an application is approved and a permit issued. This information must be submitted within days after the date of application:

- ☐ a. A topographic map, showing area of proposed use with routes, parking, staging areas, proposed improvements, and other points of intensive use specifically identified. U.S. Geological Survey (USGS) topographic quadrangle maps are available from USGS offices and from numerous private concerns. *Planning unit maps* are also available at most BLM District Offices to help determine land ownership patterns.
- ☐ b. Applicant must inform other pertinent private landowners and/or public agencies *(law enforcement, highway, fish and game, etc.)*. BLM will contact other authorized users of public lands, etc.
- ☐ c. A certificate from an insurer that comprehensive insurance has been obtained for this use or event in the amount specified by the BLM. The certificate must name the U.S. Government as additional insured, and give the BLM 30 days notice of cancellation or modification of such insurance.
- ☐ d. An acceptable bond, surety, cash deposit, or other acceptable guarantee of payment in amount of $ to secure payment of the special recreation use fee and/or mitigation of damages.

PERMITS SUBJECT TO THE FOLLOWING CONDITIONS:

(The conditions and stipulations required by the BLM are checked below.)

- ☐ 1. This permit is issued for the period specified. It is revocable for any breach of conditions or at the discretion of the BLM, at any time upon notice. This permit is subject to valid adverse claims heretofore or hereafter acquired.
- ☐ 2. This permit is subject to all applicable provisions of the regulations (43 CFR Group 2930).
- ☐ 3. This permit is subject to the provisions of Executive Order No. 11246 of September 24, 1965, as amended, which sets forth the Equal Opportunity clauses. A copy of this order may be obtained from the BLM.
- ☐ 4. This permit may not be reassigned or transferred by permittee.
- ☐ 5. Permittee must pay the sum of estimated user fees in advance of permit issuance. Adjustments to use fee charges will be based on actual use reported on the Post Use Report.
- ☐ 6. Permittee must observe all Federal, State, and local laws and regulations applicable to the premises; to erection or maintenance of signs or advertising displays including the regulations for the protection of game birds and animals, and must keep the premises in a neat, orderly manner, and sanitary condition.
- ☐ 7. Permittee must take all reasonable precautions to prevent and suppress forest, brush, and grass fires, and to prevent polluting of waters on or in vicinity of the public lands.
- ☐ 8. Permittee must not enclose roads or trails commonly in public use.
- ☐ 9. Permittee must pay the United States for any damage to its property resulting from this use.
- ☐ 10. Permittee must notify the BLM of address change immediately.
- ☐ 11. Permittee must not cut any timber on the public lands without prior written permission from the BLM.
- ☐ 12. Permittee must indemnify, defend, and hold harmless the United States and/or its agencies and representatives against and from any and all demands, claims, or liabilities of every nature whatsoever, including, but not limited to, damages to property, injuries to or death of persons, arising directly or indirectly from, or in any way connected with the permittee's use and occupancy of the public lands described in this permit or with the event authorized under this permit.
- ☐ 13. Representatives of the Department of the Interior, other Federal agencies, and game wardens must at all times, have the right to enter the premises on official business.
- ☐ 14. Permittee must abide by all special stipulations attached.
- ☐ 15. Permittee must not disturb archeological and historical values, including, but not limited to, petroglyphs, ruins, historic buildings, and artifacts.
- ☐ 16. Permittee must leave in place any hidden cultural values uncovered through authorized operations.

Certification of Information: I CERTIFY the information in this application is true, complete, and correct to the best of my knowledge and belief and is given in good faith. I acknowledge that I (we) am (are) required to comply with any conditions or stipulations that are required by the BLM when the permit is issued.

(Signature of Applicant) 11/04/08 (Date)

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212 makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

FOR BLM USE ONLY

Special Recreation Permit No. _____ is: ☐ Commercial ☐ Competitive Event ☐ Organized Groups ☐ Vending ☐ Individual
This application is hereby approved subject to the conditions and special stipulations on reverse and any attachments.

(Signature of BLM) (Date)

PERMITTEE MUST HAVE THIS PERMIT *(OR LEGIBLE COPY)* IN POSSESSION DURING USE IN PERMITTED AREAS.

(Continued on page 3)

Kigluaik Adventures: SnowCat Skiing Operations Plan
(Preliminary/Planning Document)

Background: BSNC (dba Kigluaik Adventures) a corporation established pursuant to the Alaska Native Claims Settlement Act, endeavors to establish a presence in the expanding adventure-tourism market that has seen rapid growth in recent years. The only means of ensuring that the economic benefits brought by this tourism niche stay within the region, is for active, local involvement in the development and operation of the primary businesses. Towards this end, BSNC has actively sought out professional guidance from existing ski operators, conducted snow, weather and slope analysis of the areas to be used, and scouted the terrain to determine its suitability for such an operation. Through this research and on-ground assessment, BSNC has concluded that alpine ski tours of the Kigluaik, mountains would provide clients with recreational experiences unavailable elsewhere. Additionally, by using privately-owned lands for base operations, BSNC will be actively avoiding any potential impacts to the surrounding public lands. The only use of public lands requested under this permit are the routes and drop-off and pick-up points necessary for the client's access to skiable terrain.

Personnel: The staff for the operation will consist of anywhere from 1 to 4 people. The core staff will be the ski guides. Assistance may be provided by camp crew and/or ground support.

The guides will be trained within industry standards. Minimally they will have Level I Avalanche training, current CPR for Rescuers, and current EMT I, OEC, or WFR certification. Ground support and camp crew must have valid driver's licenses, extensive experience running snowmobiles in backcountry situations, preferably in the Seward Peninsula area. EMT trained ground support crew would be desirable.

The guides will be responsible for all Public Relations with clients, and will provide oversight for safety and daily operations during the contract period.

Ground support crew will be responsible for ground transportation of materials, equipment and clients. They will set up camps, supply them and break down camps at the end of the contract period. More specific duties may be assigned (if an employee) or negotiated (if a contract) during the period of operations. Support crew will be responsible for maintaining all associated camp equipment, including Snowcat, snowmachines, and sleds.

Base Camp: Base camps will be set up at either Glacial Lake, Salmon Lake or the Pilgrim River Campground for staging daily operations on lands owned by Bering Straits native Corporation. Where cabins are not available, base camp will consist of a large (16X20) arctic weatherport tent, complete with heat and

minimal cooking facilities. Basic survival equipment will be housed at the base camp. This equipment will include at least one sleeping bag and pad per individual (clients and personnel), and enough emergency food for 6 days. A power source will be required to recharge batteries for FRS radios and Satellite phone. A satellite phone will remain at the base camp and one will be carried by the lead guide. All camps will be placed on private lands owned by BSNC.

Transportation: Transportation for clients will be provided by Kigluaik Adventures and will consist of a Hagglunds BV206 Snowcat (aka "Bearcat"). The Hagglunds vehicle can transport up to 17 people though the group size will be limited to eight clients and three support staff for a total of eleven persons per trip. Due to the four track system, the Hagglunds vehicle has a relatively low ground pressure rating of 1.76 p.s.i. and a gross total weight of 9640 lbs. Clients will be transported from Nome or the base camps on a daily basis to the areas targeted for skiing.

The Snowcat operator will have OSHA certification for snowcat operation and safety.

Chartered air service will be used in the event that evacuation for injuries is required or if resupply of base camps is required.

Proposed Routes and Use Area Access: Kigluaik Adventures has conducted slope analysis of the Kigluaik Mountains to determine the safest routes available for access to prime ski country. While the route map (Map 1: East and Map 1: West, attached) contains a seeming large number of routes, actual routes chosen each day will be contingent upon snow cover, prevailing winds, snow safety determinations, and skiers' ability. It is anticipated that less than 30% of the routes show on the maps will be utilized in any one season. All routes will be mapped using standard GPS tracking methods and a refined and reduced map will be submitted in subsequent years. All travel will occur on the snowpack whenever possible, and thawed ground and wet areas will be avoided.

Snow Safety: While the Use Area can be considered only low-moderate avalanche potential, safe enjoyment of the Kigluaik Mountains is the primary goal of Kigluaik Adventures. All guides will be trained in rescue and evacuation techniques. Avalanche beacons and knowledge of their use will be required for all clients. Guides will provide training to clients prior to entering the field in avalanche beacon use with particular attention paid to search and recovery methods. All clients and guides will be required to carry a beacon, shovel and avalanche probe. A search and rescue plan will be included in all safety training/briefing provided clients. Clients will not be placed in situations that appear to have moderate to high avalanche potential, as determined by the guides.

The minimum requirement for guides is National Ski Patrol Avalanche I, and at least one guide will have current certification in Avalanche II. Guides will also possess current certification in one of the following: NSP Outdoor Emergency Care Technician, Wilderness First Responder, or Emergency Medical Technician I or better.

Daily weather reports will be received at Base camps via satellite phone. All drop off points for clients will be evaluated for avalanche potential using accepted industry standards. Backcountry ski rules will apply in all circumstances: skiers will ski at least 100 feet apart and guides will determine safe areas and escape points on all routes prior to any decent. Snow pack data will be collected and analyzed prior to the arrival of clients and at any point when staff identifies potential changes in the characteristics of the snowpack such as moisture content, surrounding slope angles, depth, or uniformity.

Emergency Response Plan: Kigluaik Adventures will make every effort to reduce the inherent risk in winter activities, however, in the event that a mishap occurs, crewmembers and clients will implement the following, depending on the nature of the incident.

1) The following procedures are to be followed in the event of an injury during operations:

a) Staff will determine the nature of the injury treat according to OEC, WFR, or EMT standards depending on level of certification.

b) Transportation needs will be assessed and evacuation undertaken based on severity of injury and level of medical care required.

c) In the event that the injury requires immediate medical attention, EMS will be notified via Satphone, and air evacuation plan will be implemented.

d) In the event that air evacuation is not possible due to inclement weather Nome SAR will be notified and ground transportation will begin using snowcat or snowmobile.

2) The following plan provides the procedures in the event a client becomes separated from the group during operations:

a) Staff will determine the point at which the missing party was last seen, and evaluate the approach for a ground-based search.

b) The missing party will be tracked from PLC (point of last contact) by staff, either on skis, snowshoes, or with the snowcat.

c) Air support will be notified and will be asked to standby in the event that the missing party is not located within a reasonable period.

Data and Information Collection: During operations KA personnel will maintain daily logs for each trip. The logs will contain the following:

1) Number, names and ages of clients.
2) Maps of areas used during each day.
3) Number and location of each snowcat drop off and pick up point.
4) Detailed "line" maps for each run and slope skied.
5) The snowcat routes of each trip.
6) Location, numbers, and species of any large game or denning areas observed during each trip.

Safety Education and Briefings: Kigluaik Adventures will provide all clients detailed safety briefings related to loading and unloading the snowcat and the emergency response plans outlined above. All clients will be required to carry and be knowledgeable in the use of standard alpine safety equipment (shovel, probe and beacon). Avalanche response and beacon operation/search practice sessions will be conducted prior to embarking on any snowcat trip. Basic arctic survival techniques will be included in all safety briefings.

Appendix B Back Country Skiing Supplemental Questionnaire

WORLDWIDE OUTFITTER & GUIDES ASSOCIATION

ANY PERSON WHO KNOWINGLY AND WITH INTENT TO DEFRAUD ANY INSURANCE COMPANY OR OTHER PERSON, FILES AN APPLICATION FOR INSURANCE CONTAINING ANY FALSE INFORMATION, OR CONCEALS FOR THE PURPOSE OF MISLEADING, INFORMATION CONCERING ANY FACT MATERIAL THERETO, COMMITS A FRAUDULENT INSURANCE ACT, WHICH IS A CRIME.

BACK COUNTRY SKIING SUPPLEMENTAL QUESTIONNAIRE

THIS IS FOR QUOTATION PURPOSES ONLY – THIS IS NOT A BINDER

PROPOSED EFFECTIVE DATE: February 1, 2009

General Information

1. Applicant (as it would appear on the coverage contract): Bering Straits Native Corporation
2. Doing Business As: Kigluaik Adventures
3. Mailing Address: 110 front Street, Suite 300, P.O. Box 1008
   City: Nome State: AK Zip: 99762
4. Contact Person: Matt Ganley Years Experience: 15
   Contact Person is: ☐ Owner ☐ Manager ☐ Promoter ☒ Management ☐ Other:
5. Day Phone: (907)632-7197 Evening Phone: Fax Number: (907)443-2985
6. Web Address: www.beringstraits.com E-mail: mganley@beringstraits.com
7. Is this a new business? ☒ Yes ☐ No If now, how many years have you been in business?
8. Insured is: ☐ Individual ☒ Corporation ☐ Partnership ☐ Joint Venture ☐ Other:
9. Length of season: March 1 through June 1

Insurance History

10. Who was your last or is your current insurance carrier? None for this line of business.
11. What is or was your annual premium? N/A
12. Describe your claims and loss history: New line of Business--no activity yet.

Operations

Please attach a list of guides, ages, and experience and include resumes of key personnel.

13. What elevations will you be operating at? Less than 4,000 feet
14. What is the average slope steepness of your skiing terrain? 30 degress
    What is the steepest that you would operate on? 35 degrees
15. What is your average snowfall? 100 inches
16. What is your forecasting source for weather conditions? NOAA/Local Forecasts
17. How do you keep track of current snow conditions? Snowtel sites/3 located in region
18. How is current snow condition information transferred to guides who might not have been out for several days or more? Daily Briefings
19. Describe each guide's training and experience as it relates to snow stability evaluation in detail.
    All guides will have current certification for one of the following: WFR, NSP OEC, EMT 1 or higher, CPR. Additionally all guides will have Avalanche I certification and at least one guide will be Avalanche II certified.
20. Do you maintain any weather stations or keep weather records? We maintain daily weather records going back to 2000. Placement of a Snowtel station in the center of the permitted area is anticipated within the next two years.

P.O. Box 469 • Sandy, UT 84091-0469
Phone 1-800-321-1493 • Fax 1-800-666-9011 • E-Mail: wcga@insureguides.com
Web Site: www.insureguides.com

21. Are guides involved in avalanche control work in the areas you operate in? ☐ Yes ☒ No

    Describe: No avalanche control work is currently conducted in the area. Due to limited snowfall and prevailing winds, this snowpack has a low-moderate avalanche risk and could be generalized as a low energy snowpack.

22. Describe the required contents of guide's pack: Probe, shovel, beacon, satellite phone, radio, bivy sack, first aid supplies, strobe, backpack stove, emergency blankets, additional clothing.

23. In case of an avalanche burial, describe your protocols for hasty search and probe line search if necessary: 1) Contact SAR in Nome with location and nature of situation; 2) Hasty search and probe line to be conducted according to NSP protocol.

24. Do you have access to avalanche dogs? ☐ Yes ☒ No

25. Can other professionals in the area be relied upon for search and rescue? ☒ Yes ☐ No

26. Describe your PIEPS maintenance program? All guides and clients will have compatible beacons. Daily beacon function checks will be conducted and all batteries will have 80% power reserve or better at the start of each day.

27. How are clients trained in PIEPS use? Clients, if not certified with Avalanche I or better will participate in training for beacon use, beacon search, and victim recovery.

28. What do you tell clients if the snow is unsafe? Clients will be informed that no skiing or travel will occur until unsafe conditions moderate. Other activities are planned and refunds may be made depending on circumstances.

29. Will you be using motorized transportation such as snowmobiles or snow-cats other than already described? ☒ Yes ☐ No If yes, list here: Snowmobiles as backup and for evacuation/rescue.

30. Do you have adequate lower angle terrain to use on bad days with safe access? ☒ Yes ☐ No

31. Please provide copies of all brochures and promotional material; include material that portrays your operation, (articles, awards, achievements, etc.)

32. Please provide a copy of the Release and Acknowledgement of Risk Form each guest will read and sign.

Activity Breakdown/User Days

Description of Activity	Annual # of Guests	X	Number of Days Each Person Participated	=	Total User Days
Back Country Skiing		X		=	
Heli-Skiing		X		=	
Snow Cat Skiing	24	X	5	=	120
Other Snowcat tours/non-skiing	50	X	1	=	50

Note: It is critical that the Association have a clear understanding of your operation. Also, booking trips for others is not covered by this coverage contract. The member must request that the entities you book for name you as an additional insured on their coverage.

REPRESENTATIONS AND WARRANTIES

The "Applicant" is the party to be named as the "Insured" in any insuring contract if issued. By signing this Discovery Questionnaire, the Applicant for insurance hereby represents and warrants that the information provided in the Discovery Questionnaire, together with all supplemental information and documents provided in conjunction with the Discovery Questionnaire, is true, correct, inclusive of all relevant and material information necessary for the Association to accurately and completely assess the Discovery Questionnaire, and is not misleading in any way. The Applicant further represents that the Applicant understands and agrees as follows: (i) the Association can and will rely upon the Discovery Questionnaire and supplemental information provided by the Applicant, and any other relevant information, to assess the Applicant's request for insurance coverage and to quote and potentially bind, price, and provide coverage; (ii) the Discovery Questionnaire and all supplemental information and documents provided in conjunction with the Discovery Questionnaire are warranties that will become a part of any coverage contract that may be issued; (iii) the submission of an Discovery Questionnaire or the payment of any premium does not obligate the Association or any insurer to quote, bind, or provide insurance coverage; and (iv) in the event the Applicant has or does provide any false, misleading, or incomplete information in conjunction with the Discovery Questionnaire, any coverage provided will be deemed void from initial issuance.

The Applicant hereby authorizes the Association, and its agents, to gather any additional information the Association deems necessary to process the Discovery Questionnaire for quoting, binding, pricing, and providing insurance coverage including, but not limited to, gathering information from federal, state, and industry regulatory authorities, insurers, creditors, customers, financial institutions, and credit rating agencies. The Association has no obligation to gather any information nor verify any information received from the Applicant or any other person or entity. The Applicant expressly authorizes the release of information regarding the Applicant's losses, financial information, or any regulatory compliance issues to this Association in conjunction with consideration of the Discovery Questionnaire.

The Applicant further represents that the Applicant understands and agrees the Association: (i) may present a quote with a sub-limit of liability for certain exposures, (ii) may quote certain coverages with certain activities, events, services, or waivers excluded from the quote, (iii) will rate each quotation in the best interest of each Association member to the extent possible to meet the overall intent of the Association's program of insurance for all members, and (iv) offer several optional quotes for consideration by the Applicant for insurance coverage. In the event coverage is offered, such coverage will not become effective until the Association's accounting office receives the required premium payment, and the Applicant signs and returns the appropriate "Acknowledgement and Coverage Contract Receipt" form within 10 days of receiving an insurance coverage contract.

The Applicant agrees that the Association and any party from whom the Association may request information in conjunction with the Discovery Questionnaire may treat the Applicant's facsimile signature on the Discovery Questionnaire as an original signature for all purposes.

IMPORTANT: Each accepted Applicant is provided insurance as a participating member under a Master Group Policy of Insurance issued on behalf of the Worldwide Outfitter and Guides Association, a qualified "Purchasing Group" under the Risk Retention Act of 1986—Public Law 97-45. Master Group Policies have been issued to the Association, formed and governed by the laws, rules, and regulations of the State of Utah, to which members will be added as "Participating Members." The Association's program of insurance is a fully insured plan with an insurer permitted to provide insurance in each Association member's state of residence.

All coverage contract charges and service provider fees are minimum and fully earned as of the effective date of coverage. Membership in the Association is restricted to those whose business or activities are similar with respect to liability to which members are exposed by virtue of any common business, act, product, service, premises, or operations. The Applicant represents that the Applicant understands and agrees: (i) the Applicant's request for the Association to quote or otherwise effect coverage for the Applicant is without undue influence or incentive, (ii) the Applicant is individually procuring any insurance that may be provided as a participant in a Master Group Policy, where the benefits and coverage have already been approved by the Association's Purchasing Group, (iii) any coverage that may be provided will be provided under a Master Coverage Contract has been effected in the State of Utah as the state in which the Purchasing Group is organized and domiciled, and where the Association's Purchasing Group's principal office is located, (iv) all rules and regulations applicable to the individual or self-procurement of insurance will govern any coverage provided, and (v) the Applicant is individually responsible for the direct payment of taxes related to coverage provided in the Applicant's state of residence. Should taxes be made a part of any quotation provided by the Purchasing Group to the Applicant, the Association may, as an accommodation and convenience to the Applicant, collect and remit any tax collected to the tax collection agency in the member's state of residence.

Dated: _____ Applicant: Matt Ganley

Signature_____ Print Name

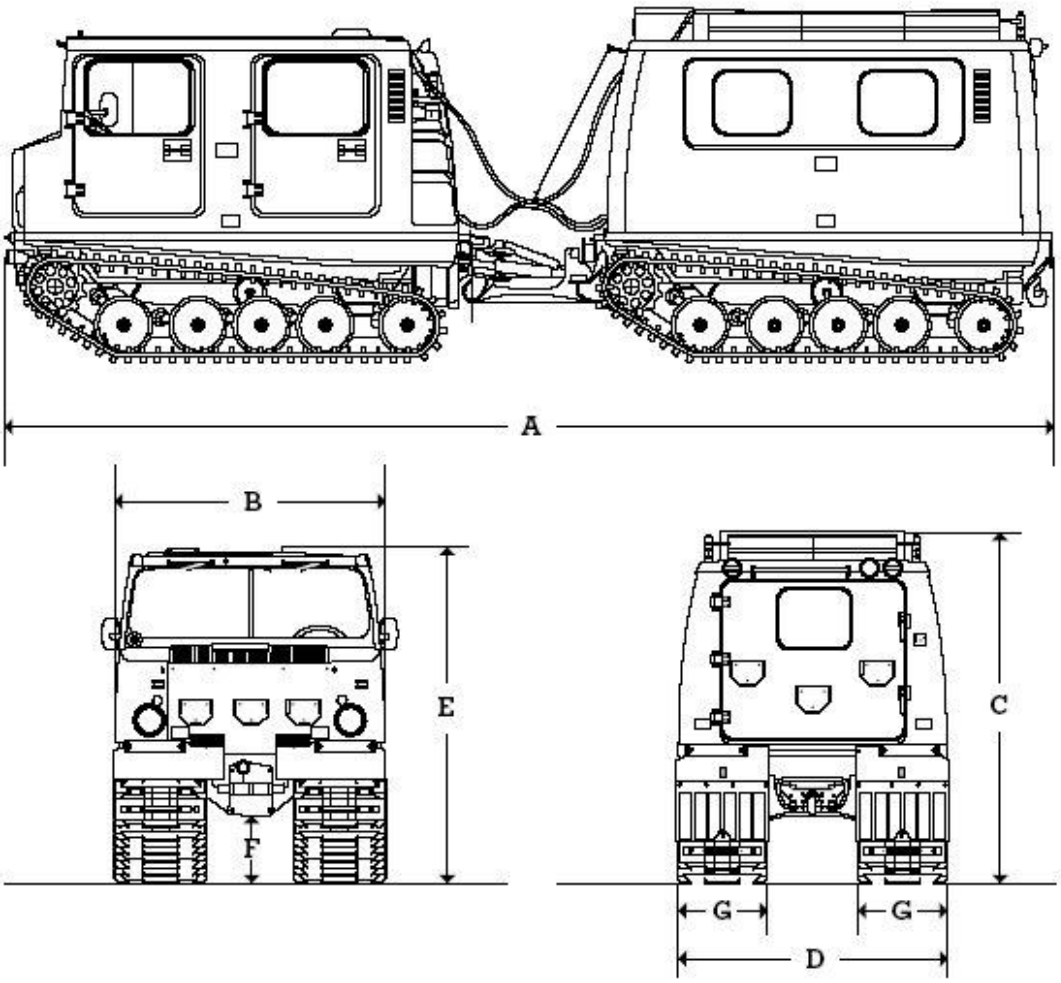
Appendix C Hugglunds Bv 206 Specification Sheets

ARCTIC

Bv 206

Dimensions

HÄGGLUNDS VEHICLE



	mm	inch		mm	inch
A	6900	271.0	E	2300	90.5
B	1870	73.6	F	350	13.7
C	2450	96.5	G	620	24.4
D	1850	72.8			

Technical Data

Weight and Payload

	Front Car*	Rear Car*	Total
Curb weight	2710 kg (5974 lbs)	1620 kg (3571 lbs)	4330 kg (9545 lbs)
Payload	580 kg (1279 lbs)	1670 kg (3682 lbs)	2250 kg (4961 lbs)
Grossweight	3290 kg (7253 lbs)	3290 kg (7253 lbs)	6580 kg (14506 lbs)
Passengers	5 (6)	11	16 (17)
Cargo space	2.5 m³ (88 ft³)	5.5 m³ (194 ft³)	8 m³ (283 ft³)

* Driver 70 kg (154 lbs) included in payload
** Maximum 200 kg (441 lbs) of the payload can be carried on the roof rack

Maximum trailer weight	2500 kg	5500 lbs
Specific ground pressure Front/Rear car 0.2/0.05 m sinkage	11.6/13.6 kPa	1.68/1.97 PSI

Performance

Max. speed, on roads	55 km/h (34 m.p.h.)
in water	3 km/h (2 m.p.h.)
Gradeability, hard surface	60% (31°)
deep snow	30% (17°)
Range on roads	300 km (186 miles)
Minimum operating temperature	-52°C (-61.6°F)

Engine

Industrial Ford	V6 Gasoline	136 hp
Mercedes-Benz	5 cyl.Turbo Diesel	125 hp
Mercedes-Benz	6 cyl.Turbo Diesel	136 hp

Gearbox

Make	Daimler-Benz W4A 040
Type	Automatic 4-step forward, 1 reverse
Transfer gearbox manufacturer	Hägglunds Vehicle AB
Gear ratios	High 1.28:1, Low 2.11:1

Steering System

Type	Hydrostatic, articulated
Turning radius	8 m (26 ft)
Emergency steering	Standard

Tracks

Type	Moulded rubber with cord
Width	620 mm (24.4 in)
	Four track drive

Electrical System

Voltage	24 V DC
Alternator	55 A
Batteries	105 Ah, 2x12 V

Bodies

Material	Glassfibre reinforced plastic with PVC foam insulation

For more information, please contact:

Ragnar Wesström
Arctic Tracks Ltd.
Box 2382
Yellowknife, NT
X1A 2P8 Canada

Phone: 867-873-4334
Mobile: 867-669-7980
Cell: 867-444-9591
Fax: 867-873-3825

E-mail: info@arctictracks.com
Web: www.arctictracks.com

Appendix D January 30, 2009 Notice letter

Case File No: AA-091100
Environmental document No: DOI-BLM-AK-1300-0004-EA

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Anchorage Field Office
4700 BLM Road
Anchorage, Alaska 99507
http://www.ak.blm.gov

In Reply Refer To:
2930 (011)
AA-091100

The Anchorage Field Office, Bureau of Land Management received an application from Bering Straits Native Corporation dba Kigluaik Adventures to run snow cat tours within the Kigluak Mountain range north of Nome under a Special Recreation Permit (SRP). The general area would encompass Townships 5-8 South, Ranges 30-36 West in the Kateel River Prime Meridian. No base camps are proposed on public lands.

We are seeking your comments on the SRP application. The comment period will close 30 days after the date of this notice. Written comments received on or before this date will become part of the official record and will be considered in the determination on the permit application.

If You Have Any Questions

If you have any questions about this letter, please contact Thomas Sparks in the BLM Nome Field Station at (907)-443-2177. You may submit written comments regarding the proposed action to the undersigned at the address below. No public meeting is scheduled:

United States Department of Interior
James M. Fincher, Field Manager
Anchorage Field Office
Attention: AA-0091100
4700 BLM Road
Anchorage, Alaska 99507

Sincerely,

James M. Fincher
Field Manager

011:TSparks:ts:1/30/09:2177C:tomfy08/BSNC KIGS/public comment letter

Send to:

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Kawerak Inc.
Attention Subsistence Division
P.O. Box 948
Nome, AK 99762

Bering Straits Native Corporation
P.O. Box 1008
Nome, AK 99762

Thomas Gray
Chair, Seward Peninsula Advisory Committee
P.O. Box 1071
Nome, AK 99762

Inupiaq Village of Council
P.O. Box 2050
Nome, AK99762

Native Village of Brevig Mission
P.O. Box 85039
Brevig Mission, AK 99785

Native Village of Teller
P.O. Box 567
Teller, AK 99778

Native Village of Mary's Igloo
P.O. Box 546
Teller, AK 99778

Nome Eskimo Community
P.O. Box 1090
Nome, AK 99762

Sitnasuak Native Corporation
P.O. Box 905
Nome, AK 99762

City of Nome
P.O. Box 281
Nome, AK 99762

Northern Norton Sound Advisory Committee Chair
c/o Board Support Section, Arctic Region
P.O. Box 689
Kotzebue, AK 99752

Tony Gorn
ADF&G Nome
P.O. Box 1148

Nome, AK 99762

Jim Menard
ADF&G Nome
P.O. Box 1148
Nome, AK 99762

Appendix E - Hagglunds BV-206 / US Military M-973 Small Unit Support Vehicle Information Paper

Hagglunds BV-206 / US Military M-973 Small Unit Support Vehicle Information Paper

The vehicle being considered in this EA is also known as the M-973 Small Unit Support Vehicle (SUSV) by the US Military and is operated world-wide. The Alyeska Pipeline Service Company first used SUSV's in Alaska during the late 1970's as part of their pipeline security patrol. The US Army has operated a fleet of SUSVs in Alaska since 1983; there were nearly 1,000 SUSVs in Alaska at one time (photo 1). The Alaska Army National Guard (AK ARNG) has had SUSVs stationed at the Nome Armory since the late 1980's (photo 2). Most of the Alaska based military SUSVs have been taken out of service since the Army reorganized from an arctic warfare specialized force into the Stryker Brigade at Ft Wainwright and the Airborne Brigade at Ft Richardson in recent years.

The vehicle consists of two track-driven cars that are permanently coupled together by a central, articulated steering assembly. Neither car can operate independently. Steering is accomplished using hydraulic cylinders that turn the cars relative to each other. The front and rear cars are connected by a unique hydraulic steering linkage, which gives great flexibility in all axles and extremely good maneuverability. This device provides the steering control between the two cars at the same time as it allows necessary freedom for the two cars to individually follow uneven terrain. The US military SUSV is powered by a turbo charged diesel engine while the commercially available vehicle may have a diesel or gasoline engine. The SUSV requires minimal driver training because it operates much like any automobile with automatic transmission and power steering. It is equipped with seat belts, horn, lights, etc. to make it highway legal.

With all four tracks are powered at all times. The SUSV's large track area allows the vehicle to travel over deep snow and soft ground which would be impassable to almost all other tracked and wheeled vehicles. It is also amphibious, being propelled in the water by its four tracks. The SUSV can negotiate such obstacles as soft snow, drifting sand and marshlands and can climb considerable gradients, swim without preparation and work in arctic cold or in tropical heat.

The SUSV contacts ground on four, 24.4 inch wide all rubber tracks. This enables the vehicle to exert a ground pressure that is substantially less than the human foot and only slightly greater than a snow-mobile. Fully loaded the front car exerts 1.68 pounds per square inch (psi) and the rear car exerts 1.97 psi. By comparison the human foot of a standing adult male exerts from 8-12 psi (double this when walking), a snow mobile exerts about .75 psi, and an automobile exerts about 25-35 psi.

When operating on hard surface or frozen open ground the SUSV leaves very little evidence of passing. However when operated on soft ground or thawed tundra multiple passing's will wear a substantial track. While the vehicle's rubber tracks will create very little damage when running cross-country over frozen ground or snow, it can crush or break-off exposed standing vegetation.

The SUSV chassis is fully enclosed by a fiberglass body to allow it to float/swim. The underbelly is flat with several bolt secured access panels to allow the operator to service the engine (oil changes, etc). As long as the access panels are properly secured there would be no release of fuel, oil, or antifreeze from the engine compartment in the event of leaks or break-down. The SUSV has two external fuel tanks

mounted in protected locations at the rear of the front car with fill ports well above the water line when the vehicle is swimming.

Photo 1 - US Army Alaska SUSV operating off-road during winter.

Photo 2 - M973 SUSV belonging to the AK ARNG at the Stewart River Training Area near Nome, AK on August 5, 2000.